S. Hrg. 98-150

MANAGEMENT OF THE DEPARTMENT OF DEFENSE

HEARING

BEFORE THE

COMMITTEE ON GOVERNMENTAL AFFAIRS UNITED STATES SENATE

NINETY-EIGHTH CONGRESS

FIRST SESSION

PART 1

MARCH 23, 1983

Printed for the use of the Committee on Governmental Affairs

U.S. GOVERNMENT PRINTING OFFICE

21-162 O WASHINGTON : 1983

S401-55

COMMITTEE ON GOVERNMENTAL AFFAIRS

WILLIAM V. ROTH, JR., Delaware, *Chairman*

CHARLES H. PERCY, Illinois
TED STEVENS, Alaska
CHARLES McC. MATHIAS, JR., Maryland
WILLIAM S. COHEN, Maine
DAVID DURENBERGER, Minnesota
WARREN B. RUDMAN, New Hampshire
JOHN C. DANFORTH, Missouri
THAD COCHRAN, Mississippi
WILLIAM L. ARMSTRONG, Colorado

THOMAS F. EAGLETON, Missouri
HENRY M. JACKSON, Washington
LAWTON CHILES, Florida
SAM NUNN, Georgia
JOHN GLENN, Ohio
JIM SASSER, Tennessee
CARL LEVIN, Michigan
JEFF BINGAMAN, New Mexico

JOAN M. MCENTEE, *Staff Director and Chief Counsel*
C. LINCOLN HOEWING, *Professional Staff Member*
IRA S. SHAPIRO, *Minority Staff Director and Chief Counsel*
TERRY JOLLY, *Chief Clerk*

CONTENTS

	Page
Opening statements:	
Senator Roth	1
Senator Cohen	5
Senator Bingaman	9

WITNESSES

MARCH 23, 1983

W. Paul Thayer, Deputy Secretary, Department of Defense, Washington, D.C., accompanied by Richard DeLauer, Undersecretary of Defense for Research and Engineering, and David Chu, Director, Program Analysis and Evaluation, Office of the Secretary	11
Walton H. Sheley, Jr., Director, Mission Analysis and Systems Acquisition Division, General Accounting Office, accompanied by Robert Gilroy, General Procurement, GAO, and George J. Wooditch, Special Projects, GAO	74
George W. S. Kuhn, independent consultant, Washington, D.C	122

ALPHABETICAL LIST OF WITNESSES

Chu, David: Testimony	11
DeLauer, Richard: Testimony	11
Gilroy, Robert: Testimony	74
Kuhn, George W. S.:	
Testimony	122
Prepared statement	135
Sheley, Walton, H., Jr.:	
Testimony	74
Letter to Senator Roth, April 18, 1983	80
Prepared statement	83
Responses to written questions submitted by Senator Roth	115
Thayer, W. Paul:	
Testimony	11
"Selected Acquisition Reports Show First Year End Decrease in Costs in Ten Years," news release, March 22, 1983	24
Categories of weapons	45
Measures of military power	46
Prepared statement	50
Responses to written questions submitted by Senator Roth	65
Responses to written questions submitted by Senator Levin	71
Wooditch, George J.:Testimony	74

ADDITIONAL MATERIAL SUBMITTED FOR THE RECORD

The Federal Report Column, from the Washington Post, March 23, 1983	10
"U.S. Defense Planning," a critique, by John M. Collins, March 1983	157
"Recent Initiatives of the Joint Chiefs of Staff and National Defense University," by John Collins	172

MANAGEMENT OF THE DEPARTMENT OF DEFENSE

WEDNESDAY, MARCH 23, 1983

U.S. SENATE,
COMMITTEE ON GOVERNMENTAL AFFAIRS,
Washington, D.C.

The committee met at 9:30 a.m., in room SD-342, Dirksen Senate Office Building, Hon. William V. Roth, Jr. (chairman of the committee) presiding.

Present: Senators Roth, Coehn, Rudman, Levin, Sasser, and Bingaman.

OPENING STATEMENT OF SENATOR ROTH

Chairman ROTH. The committee will please be in order.

Mr. Thayer, I want to welcome you here this morning. We are pleased to have you and look forward to your testimony.

Today, the Committee on Governmental Affairs begins a series of hearings to review the management record of the Department of Defense.

I believe that these hearings are in the finest tradition of this committee, whose mandate is to examine the economy and efficiency of all Federal programs.

Let me say, at the outset, that I am concerned. I am concerned because the consensus for increased defense spending is being lost.

Time does not permit me to review some of the national polls that have been taken which reveal the erosion of the public's support for an increased commitment to our Nation's defenses.

I would just like to point out, however, that I recently sent to my people back home, to every household, a questionnaire covering many items, one of them being the need for increased defense spending. The results of that questionnaire show that 65 percent of the people in Delaware believe we are spending too much for defense, that it should be cut.

I think that is an important factor for you and other officials in the Pentagon responsible for its administration to recognize.

Let me point out, because I think it is important to understand the dimension of the problem, that we are asking the typical American family this year to spend $750 of their family budget for defense programs. That $750 is a $90 increase over last year, and it represents a sizable factor in the typical family budget of $25,000 a year.

I think we have here a problem of trust. I happen to believe that the public, while they are skeptical and have very serious problems

with the dimension of defense spending, are willing to make the sacrifice, are willing to do what is necessary if they see their dollar being well spent.

One of my concerns, and you are just starting in your position I know, Mr. Thayer, has been that too often people in the Pentagon, when they hear concern about defense spending expressed, say, "Well, that is the result of the rhetoric of the doves or it is the result of the prejudice of the press."

But I think it is important to understand that there is a broad consensus, a broad consensus developing, frankly, from doves to hawks, from conservative to liberals, that our defense dollar is not meeting the cost effectiveness that we would all like.

I just point out that you have thinking people, thinking commentators from organizations like Brookings, the Heritage Foundation and others, all of them zeroing in on the question of reforming the management of defense programs, even those people who say, "We should be spending more," as some of them do at the Heritage Foundation, for example, are also saying that we are not getting the biggest bang for our buck.

I want to be perfectly fair, because I think it is important that we all understand, as we begin these hearings, that the procurement of military weapons is, indeed, a very complex matter.

While you in DOD do a lot of buying of standard commercial items, and that is an area that we would probably want to look at, the fact is that we are talking here today about weapons systems. In that area you are on the cutting edge of technology. That makes it extraordinarily difficult to effectively control costs.

I think Congress has to take part of the blame. I think politics has played a major factor, frankly, in increasing costs. Everyone in the Senate and the House at one time or another fight for their piece of the action. Too often politics is playing a role rather than cost effectiveness.

I would just say to my colleagues that the record of Congress in managing its own projects isn't always that good, either. If we are too critical, I would just point out that the costs of the Hart Building were 180 percent over its original estimate, not a record to be very proud of, and we have been building buildings ever since we have been a Republic.

So all the fault does not lie with the Pentagon, and I want to make that very clear to you, Mr. Thayer, that I understand.

Nevertheless, I think it is important that we take the steps necessary to retrieve the consensus for defense spending. Frankly, I don't think you are going to get the 10-percent increase you have been asking for this year in the defense budget.

I have serious reservations about it myself. But what I am asking today, Mr. Thayer, is that the Department of Defense work with us, not around us or over us or against us, to help build that consensus once again.

I think the first step we must take to rebuild that consensus is to recognize that there is a serious problem. There should be no stonewalling or suggesting that all the defense budget is sacrosanct.

We must candidly identify the problem or problems and then discuss how they can be solved. It seems to me that our problems

break down into two areas: One is waste, fraud and abuse, something we find not only in your organization but elsewhere; and, second, basic reforms, the way procurement is organized; how weapon decisions are made; how we implement those decisions.

Virtually every Secretary of Defense since the early sixties has tried, and, I think, in good faith, to stop the escalating costs of weapons systems. The history of these efforts reminds me a little bit of playing catch with a wet cake of soap. As soon as you think you have got it in your hands, it manages to slip away.

Today, the General Accounting Office, the watchdog for the Senate, will present some new figures on cost growth which are startling and dismaying. They have found that the typical average cost of all major defense systems increased by 36 percent since last year alone and over 170 percent over the original estimated costs for these programs.

I think part of these costs are because of increased purchases, and that is another matter.

But it is a matter of real concern that the typical average cost of major systems have increased 36 percent.

Mr. Secretary, I think we are going to have to do more with less or we will find that more buys less. Our hearings this year are going to examine how DOD estimates costs for weapons; how it plans what it needs; and whether it uses the most efficient methods to purchase weapons and equipment. The effectiveness of testing procedures used by DOD to evaluate weapons will be the subject of special hearings as will the management structure of the Department itself.

In closing, just let me say that the support of the American people for necessary defense programs cannot be built on fears of attack but must be built on trust and on confidence. Americans must be convinced that we have identified our important defense priorities. They must be shown that we know how to satisfy these priorities efficiently.

[The prepared statement of Senator Roth follows:]

PREPARED STATEMENT OF SENATOR ROTH

Today, the Committee on Governmental Affairs begins a series of hearings to review the management record of the Department of Defense.

I believe these hearings are in the finest traditions of this committee, whose mandate is to examine the "Economy and Efficiency" of all federal programs.

In 1981, we held three days of hearings on the management of the acquisition process in the Defense Department. In many ways, those hearings form the basis for our current investigation of defense management. The committee expects that this in-depth ongoing investigation will last approximately nine months.

Let's not kid ourselves—the consensus for increasing defense spending has been lost. A recent New York Times/CBS news poll found that 63 percent of those surveyed would rather reduce military programs than cut social spending, up from 48 percent only a year earlier. A year ago, 44 percent felt the United States trailed the Soviets in military power; now, only 32 percent feel that way. In my own State of Delaware, I took a recent constituent poll and found fully 65 percent of those who responded wanted defense outlays cut. We're spending billions more on defense—but the public is losing its willingness to support the effort.

The problem is one of trust. I am convinced that the public does not believe that the Pentagon can spend huge sums of new money efficiently.

I also believe that the loss of public support is a self-inflicted wound. The public seems to be saying that the bucket holding billions of dollars of defense money is leaking. They are aware of countless newspaper stories of wasteful defense spending resulting in fewer weapons, more cost overruns and less performance.

Even more importantly, the public only rarely hears anything but excuses from defense officials when things go wrong.

I hope the Defense Department realizes the consensus for increasing defense spending is disappearing and that it is not just the support of the public which has eroded. Experts from across the political spectrum, from organizations like the Brookings Institution, the Center for National Policy and the Heritage Foundation, agree that we must do something about the way we set priorities and manage the Defense Department. A broad, bipartisan feeling exists, among the experts and among our constituents, that we can't just throw money at defense programs any more than we can social programs.

In the face of this, the Defense Department is asking each family to invest over $750 out of it's average $25,000 annual income in the fiscal year 1984 defense budget—an increase of $90 from last year. Somehow we have to reassure the taxpayers that their dollars will be spent wisely and effectively.

I want to emphasize that I am fully aware of the serious management and cost growth problems we face in defense programs are not solely the fault of DOD. Weapons programs are often expensive because they are on the cutting edge of technology. Congress it self is often responsible for adding to weapons costs by making changes in programs and stretching them out. The record of Congress in managing its own projects, such as the Hart Building which cost 180 percent more to build than originally forecast, is not enviable.

Further, I don't believe that the consensus for increased defense spending is irretrievably lost. I also seriously question, however, whether the Congress will go along with the 10-percent-plus increase in defense outlays the administration is asking for this year.

What I am asking today, Mr. Thayer, is that the Department of Defense work with us, not around us, or over us, or against us, to help build the consensus once again. We haven't lost the support of the public for defense programs because of big spending but rather because of what they view as irresponsible spending. I don't care what DOD says the facts are the perception is the most important thing in this case.

The first step we must take to rebuild the consensus is to acknowledge that we have a problem. No more stonewalling or suggesting that all of the defense budget is sacrosanct.

Second, we must candidly identify the problems we face and begin to discuss how they can be solved. For example, cost overruns in major weapons systems are undoubtedly one of the most stubborn problems we face in reducing waste in DOD. Beginning in the early 1960's, virtually every secretary of defense has tried to stop the escalating costs of weapons systems. Yet, the history of these sincere efforts reminds me of playing catch with a wet cake of soap—as soon as you think you've got it in your hands, it manages to slip away.

A recent TV commercial notes that "you can pay me now or pay me later." When it comes to weapons programs, it seems the "or" has been replaced by an "and". No matter what level of defense spending we as a nation desire, we cannot continue to accept a system which produces excessive cost overruns, is susceptible to fraud and often buys weapons which don't work.

The General Accounting Office will present today some new figures on cost growth which are startling and dismaying. They found that the total average costs of all major DOD systems have increased by 36 percent since last year alone and over 170 percent over the originally estimated costs for these programs. In fact, only 28 programs out of 133 major systems reported by the Department of Defense to GAO did not experience cost increases over the last year.

Despite the seriousness of the problem, cost overruns are only symptomatic of the many serious management problems we face in defense programs. We are not going to solve all our problems by whittling a program here and chopping a weapon there. We simply have to set priorities and establish what we absolutely must have to satisfy necessary defense missions.

It is becoming increasingly clear that we can't run efficient defense programs with a weak defense management structure. Our real challenge must be to reform the way the military spends its billions and decides what it needs.

We've got to do more with less or we'll find that more buys less. Our hearings this year will examine how DOD estimates costs for weapons, how it plans what it needs, and whether it uses the most efficient methods to purchase weapons and equipment. The effectiveness of testing procedures used by DOD to evaluate weapons will be the subject of hearings as will the management structure at the top levels of DOD.

The support of the American people for necessary defense programs can't be built on fears of attack. It must be built on trust and confidence. Americans must be con-

vinced that we have identified our most important defense priorities. They must be shown that we know how to satisfy those priorities efficiently. The administration can't ask them to spend 750 of their hard earned dollars on the defense budget this year until it can show it knows what absolutely must be bought, why each program is essential to our defense rebuilding program and how it will ensure that waste in defense programs is brought under tight control.

I welcome you here today Mr. Secretary and I look forward to hearing your testimony.

PROGRAM COST GROWTH—19 TOP WEAPONS SYSTEMS

[Status as of September 30, 1982]

Project name	Current estimated cost (In millions)	Unit cost (In dollars)	Percent change initially	Percent change 1 year	Percent change UCST
F–16 multimission fighter	$41,981.1	$21,022,083	593	106	128
F–15 advanced tactical fighter	40,553.9	28,660,000	572	164	255
F/A–18 Hornet	39,720.8	28,845,897	209	13	82
F–14A/B Tomcat	35,830.7	42,403,195	481	193	223
MX land-based missile	34,870.0	143,497,942	−38		−10
B–1B bomber	29,527.7	295,277,000			
Trident	28,424.3	86,924,465	152	−6	
CG–47 Aegis cruiser	27,583.4	1,149,308,333	141	25	60
JVX—Multimission aircraft	26,813.1	44,392,550			
Subacs sub advanced combat system	26,392.0	272,082,474		1	
SSN–688 submarine	24,277.5	433,526,786	1,364	67	161
M–1 main battle tank	19,517.1	2,760,161	549	4	205
FFG–7 Guided missile frigate	14,202.0	236,700,000	338	37	265
Fighting vehicle systems	13,387.4	1,939,360	1,602	14	195
BGM–109 Tomahawk	11,760.3	2,890,929	366	287	47
Patriot SAM–D	11,312.2	1,784,540	181	34	589
AV–8B Harrier	10,572.0	30,912,281	173	16	172
P–3C Orion	9,398.4	29,647,950	626	11	138
ALCM	8,497.9	1,943,710	1,923	41	1,504
Total current estimated cost	454,621.8				

Chairman ROTH. I am looking forward very much to hearing from you, Mr. Thayer, and prior to that, I would call upon my friend and colleague, Senator Cohen.

OPENING STATEMENT OF SENATOR COHEN

Senator COHEN. Thank you, very much, Mr. Chairman.

Let me take this opportunity to welcome Dr. DeLauer and Deputy Secretary Thayer to the hearings.

I would like to say, initially, that with these two witnesses, I think that you are going to find both of them to be candid.

Dr. DeLauer has been in the eye of the storm and has been controversial because I think he is so candid. When, in fact, I have requested information or an opinion from him, he has given it to me without hesitation.

I believe that Secretary Thayer brings the same reputation for candor, straightforwardness, and conviction to his job. I suspect that he, too, will find himself caught up in the eye of the storm controversy while being as candid and forthright.

Let me say, Mr. Chairman, that I think it is entirely appropriate that we hold these hearings on Defense Department management on a continuing basis because 80 percent of all Federal contracting is conducted through DOD.

There are two areas with which I have been concerned for some time: The first is excessive cost growth. I would like to say that progress has been made in this area under Deputy Secretary Carlucci, your predecessor in office, who initiated the so-called Carlucci initiatives, which I think have been helpful. While some progress has been made, there is still a good deal to be done.

We have the problem, Mr. Chairman, in what the experts call buying in. We buy too many weapons systems, and we buy them because of deliberately low estimates that are submitted to the Pentagon. In order to get initial funding, R&D, and then ultimately procurement, the Pentagon has found itself in the position of also buying in by virtue of being locked into the standard inflationary estimates that are determined by the Office of Management and Budget, which in the past years, at least, have been quite low. Even when inflation was turning at the rate of 14 percent, we were getting inflationary estimates of 7 percent. So we have the contractors buying in, the Pentagon buying in, and then finally, Congress getting bought out. When it comes time for production, we ask, "My God, how can we afford this price tag?" So there have been a number of reasons for cost growth, No. 1 being the inaccurate estimations of the projected costs.

Norman Augustine, chairman of the Defense Science Board, wrote a rather wry piece which discusses the consequences of cost growth. He said that:

> In the year 2054, the entire defense budget will purchase just one tactical aircraft. This aircraft will have to be shared by the Air Force and Navy 3½ days a week except for leap year when it will be made available to the Marines for the extra day.

Only he has his tongue in cheek at that particular point, but what he was suggesting was that the cost of an aircraft has escalated by a factor of 4 every 10 years. This is what I think the chairman is suggesting that we are becoming concerned about, everybody is becoming concerned about, that we are spending more and more money and getting fewer and fewer weapons.

We are building a pyramid of sorts.

Eventually, we are going to find out, no matter what the level of technology, that we will not have the numbers to make the difference. That quantity, as one expert has said, has a quality of its own.

Mr. Thayer, who is quite an extraordinary pilot, would probably agree that one on one, our aircraft are clearly superior to any of our enemy's.

One on two, we could probably still prevail. One on three gets a little dicy at that point, but one on four, you know you are in trouble no matter what the level of technology. That is what a number of us are concerned about. We are getting so few weapon systems at such a very high cost. Eventually, that is going to have a severe impact on our fighting capability.

I would also agree with the chairman that we bear not only a very small part of the responsibility, but a large part by keeping systems alive in our own districts, canceling systems only to restart them years later, and stretching them out in order to make it look more fundable in the current year. As a result, however, we have found that we double the costs while delaying the production and

not getting economies of scale. We bear a large measure of the responsibility, as well, so we cannot just shift it over to the Pentagon, the DOD. We are there, too.

Part of the problem is we do not have a good deal of information on which to rely. For example, the SAR's, the quarterly selected acquisition reports, are not easily understood. Kelly Burke has said, "Frankly, I do not know what they mean." If he could not interpret them, how are Members of Congress to interpret them. He said, "I frankly do not understand them." Well, if Kelly Burke could not understand them, then I doubt very much if members of this committee or anyone in the Senate is going to understand them.

The second point, I think in terms of having access to information is, I think it is almost too late by the time it comes to us. If you do not make the decision over in the Pentagon, by the time it goes through and it comes to Congress, it is too late. We simply are not in a position to be able to follow cost growth. We cannot do it.

So by the time these problems come to us, it is almost too late. So I have submitted for some time now that it has got to be stopped or started over at the Pentagon level when these systems first are conceived and first funded.

The second problem which concerns me is the lack of competition in defense procurement. I know this has been summoned and proved, but the fact remains that in 1981, 55 percent of the value of all the DOD contracts were sole sourced. That is, they were let on noncompetitive basis. In fiscal 1982, 54 percent were sole sourced. So we cut 1 percent off the sole-source contracts. It is necessary that we focus more attantion on this area. We have got to get more competition in the Department of Defense procurement process and in all of our Government agencies, for that matter.

This country theoretically is dedicated to the theory that if you have more competition, you will get a better product at a lower price. Yet we find that we do not have enough competition within the defense industry itself, which is one of the reasons why this committee has recently reported out a bill called the Competition in Contracting Act. S. 338 is designed to try and encourage more competition rather than less.

As Dr. DeLauer knows, there are some 17 exceptions to the use of formal advertising, which authorizes agencies to negotiate. The one exception that is invoked most frequently is the "competition is impractical" exception. Approximately 60 percent of the value of all DOD contracts was negotiated noncompetitively through this exception.

It seems that this is the largest loophole we have, and we would like to see it closed. I am hoping that the Pentagon will see fit to support the competition in contracting bill, which has been referred to the Senate Armed Services Committee. Hopefully, we can structure it in such a way that it does not undermine the legitimate concerns of those in the defense field, but achieve the goal of having more competition to get a better product for a lower price. So I look forward to Dr. DeLauer's and Secretary Thayer's testimony this morning.

[The prepared statement of Senator Cohen follows:]

PREPARED STATEMENT OF SENATOR COHEN

Mr. Chairman, I am pleased that you are continuing hearings this year to examine the management of the Department of Defense.

I am convinced that significant economies can be realized through the effective implementation of procurement reforms not only in the Department of Defense, but also throughout the federal bureaucracy. Since, however, the Defense Department is responsible for 80 percent of all federal contracting, it is appropriate that we first focus our attention on the efficiency of its procurement procedures.

Two issues are of primary concern to me: The lack of competition in awarding contracts for goods and services and the excessive cost growth in the procurement of major weapons systems.

In hearings before this Committee in October 1981, former Deputy Secretary Frank Carlucci outlined his proposals to strengthen and streamline the acquisition process of the Department of Defense. The so-called "Carlucci Initiatives" were an ambitious and well-conceived set of goals to reform defense procurement. They included a requirement that the services "budget to most likely cost" to reduce cost growth, increase program stability, and provide a more realistic long-term defense acquisition budget.

Unfortunately, the Department of Defense is still experiencing significant unanticipated cost growth in several weapons systems, although progress has been made.

The principal cause of cost growth, in my judgment, is inaccurate cost estimating. Contractors hoping to win a contract too often knowingly understate the cost of performing a service or providing a product, intentionally "buying-in" with the knowledge that modifications or follow-on contracts will compensate for the initial loss. The Department of Defense, in turn, provides Congress with overly optimistic cost estimates in order to win approval and appropriations for the projects. Unfortunately, it is the taxpayer who gets stuck with the eventual inflated bill when Congress discovers that the funds it had appropriated will not buy the weapons it wanted. The result is often a reduction in the number of units procured and a weakened defense posture.

In commenting on the problem of cost growth, Norman Augustine, the chairman of the Defense Science Board, observed that, if present trends continue:

"In the year 2054, the entire defense budget will purchase just one tactical aircraft. This aircraft will have to be shared by the Air Force and Navy 3½ days each per week except for leap year, when it will be made available to the Marines for the extra day."

What is most disturbing about Mr. Augustine's facetious observation is that it is an accurate extrapolation of current trends. The cost of an individual aircraft has consistently escalated by a factor of four every 10 years. And Mr. Augustine discovered that the rate of growth is most closely correlated with the passage of time, rather than with changes in maneuverability, speed, weight, or other technical parameters that might be expected to increase costs.

Congress often learns too late, if at all, that a project is experiencing excessive cost growth. By the time that Congress realizes that a severe problem exists, it is often too late to do anything but pay the bills.

The Defense Department does provide Congress with information on cost growth in its major weapons systems through quarterly selected acquisition reports. But the SAR's usefulness is limited by its complexity. General Kelly Burke best summed up the SAR when he admitted:

"I don't understand them, and I don't know of anyone who does."

Whether the SAR's are incomprehensible by accident, as General Burke suggests, or by design, improvements are surely needed so that Congress has a better knowledge of why and when the cost growth occurred.

The 32d Carlucci initiative was intended to promote the greater use of competition in contracting. Again, however, the performance has not matched the promise. In fiscal 1982, the Department of Defense sole-sourced about 54 percent of its contracts. That is only a very slight improvement over fiscal 1981, when about 55 percent of the Department's contracts were awarded noncompetitively.

Like other agencies, the Department of Defense justifies most of its sole-source contracts by using the "competition is impracticable" exception in current law. Last week, this Committee unanimously reported legislation that would eliminate this loophole and limit the use of sole-source contracts to situations in which they are truly warranted.

The benefits of expanded competition are numerous. Its uses saves money—at least $1.5 billion annually according to the Congressional Budget Office; it restrains cost growth; it promotes significant innovative and technological changes, and it

maintains the integrity in the expenditure of public funds by ensuring that government contracts are awarded on the basis of merit rather than favoritism.

I look forward today to questioning our witnesses about how we can expand the use of competitive contracting, improve the accuracy of cost estimation, and institute other management reforms in defense procurement.

Chairman ROTH. Thank you.

Senator Bingaman?

OPENING STATEMENT OF SENATOR BINGAMAN

Senator BINGAMAN. Thank you, Mr. Chairman. Let me just say a few things about the subject of today's hearing, and I want to first compliment the chairman for scheduling the hearing. I think that getting some information on DOD management and the way that management has performed is of major concern to a great many people in the country. This is an area on which Congress needs to try to do a better job.

There are three areas that have occurred to me in hearing the discussions both here and in the Armed Services Committee that I want to mention, briefly. I am sure you have heard a lot about them. First of all, the briefing that was given by Mr. Spinney on the plans reality mismatch with regard to the cost of weapons clearly is one category of concern. It strikes me, just from the tactical subcommittee hearings of the Armed Services Committee that I have sat through that we have a tremendous number of different weapons being produced. I think the figure that we heard from the Navy was that they had 16 production lines for aircraft. In many cases, there were as few as six of any particular kind of aircraft being produced in 1 year, which is obviously an inefficient production rate. It does seem that we could reduce the number of production lines and in that way reduce the overall cost and still keep the overall number of aircraft constant or even increase the number.

Another category of concern is the capability of weapons. It is very difficult, I have found, to get very definitive statements as to the capability of some of the different weapons systems we are putting large amounts of money into. Obviously, the services are advocating the purchase of the weapons systems, but various questions have been raised to the effectiveness of some of them, particularly the very high technology ones. It is difficult for a person like myself, on one of these committees, to assess the pros and cons of the debate with regard to the capability of the different weapons systems. The Congress could clearly use additional help in this area.

The third area where I have found it difficult to get a handle on is the extent of the threat. I understand the President is going to have a press conference on that this evening. He is going to bring out some more information on Soviet capabilities. But I have found it very difficult to get objective answers from many of the witnesses that have come before the Armed Services Committee as to the extent of the threat. As far as numbers are concerned, I am sure the figures are accurate, but to get any kind of statement pointing out any weakness in any Soviet aircraft, or Soviet tank, or any other of their weapons, you nearly have to drag it out of a witness. I have found in many cases you have to talk to people outside of the Defense Department in order to get what appears to me to

be an objective assessment of the capability of Soviet weapons to which we are trying to react.

So those are three areas of concern that I have. I am looking forward to the testimony. I think this is obviously a very difficult and extremely complicated area, but an important one about which I have a great deal to learn.

Thank you.

Chairman ROTH. Mr. Secretary, before I call on Senator Rudman, I have just had brought to my attention an article in the Washington Post. I call this to your attention because it is something that I would hope that you would address in your statement or subsequently.

But it goes very much to the thrust of what both Senator Cohen and I were saying: The importance of building trust. According to this article, the Defense Department has sent out a statement claiming decreased spending savings of something like $18.4 billion for major weapons programs from September to December of 1982. But two significant factors involved in those savings which do not involve better management directly, were cut backs on quantities; lower inflation rates.

Now, this is a matter of real concern, because I think it is that kind of a report that has given the perception that the Pentagon is not being straightforward with the kind of figures they are giving us. I do not think an $18.4 billion decrease based on cut backs in quantity can be attributed to better management. Maybe there is some reason you have to report it that way. But the problem is that it does not get to the thrust of the matter which is what are the decreases that are a result of better management? I would hope that you would address that in your remarks, because I know it is a matter of concern to people up here.

[The article referred to follows:]

[From the Washington Post, Mar. 23, 1983]

FROM "THE FEDERAL REPORT COLUMN"

A Defense Department report released yesterday claimed DOD was saving $18 billion on major weapons systems, in part by not building seven Trident submarines. Under questioning, however, Pentagon officials said they still plan to build the submarines but are accounting for them differently than before.

The report contained similar accounting shifts on some other programs, such as the air-launched cruise missile and the F16 jet fighter.

After reporters had finished quizzing officials about the report, it was impossible to determine if there had been any economies in the total price of 53 weapons programs, which the Pentagon predicted will cost $539.7 billion to complete.

Of the $18 billion in cost curtailments claimed in the report, nearly $11.3 billion was attributed to the Trident program primarily because of a schedule stretchout "and a quantity reduction of seven ships."

Under questioning, Joseph T. Kammerer, deputy assistant secretary of defense for cost and auditing, acknowledged the Pentagon still intends to build 15 of the missile-firing submarines. The seven in question had merely been shifted into another account because they would carry a different kind of Trident missile from the others.

Amid expressions of disbelief from reporters, the Pentagon rushed up Rear Adm. Frank B. Kelso, director of the Navy's strategic submarine division.

Kelso said that that "there has not been a reduction of seven submarines" and agreed that the $11.3 billion was "an accounting change." He said, "There was no intention to confuse anybody."

Chairman ROTH. At this time, I would like to call on Senator Rudman.

Senator RUDMAN. Senator Roth, thank you very much, Mr. Chairman. I have had an opportunity to discuss things at great length privately with Mr. Thayer, and I am anxious to hear his testimony and ask him some questions. I will pass up any opening statement at this time.

Chairman ROTH. Thank you, Senator Rudman.

At this time, we, again, are pleased to have you here, Mr. Secretary. I think you bring a remarkable background to your job. Frankly, in many ways, we are asking you to comment on things which you have had little or nothing to do with because of your new tenure.

But I know that we all look forward to working with you as we grapple with the problem of cost efficiency.

Mr. Thayer?

TESTIMONY OF W. PAUL THAYER, DEPUTY SECRETARY, DEPARTMENT OF DEFENSE, WASHINGTON, D.C., ACCOMPANIED BY RICHARD DeLAUER, UNDERSECRETARY OF DEFENSE FOR RESEARCH AND ENGINEERING, AND DAVID CHU, DIRECTOR, PROGRAM ANALYSIS AND EVALUATION, OFFICE OF THE SECRETARY

Mr. THAYER. Thank you, Mr. Chairman and members of the committee. I also look forward to working with you. There are a series of common problems which I think are freely aired, and unfortunately, too many people, I think, have the impression that not much is being done about it.

You commented on one of the excuses made by the Department of Defense, that our stories are not reported accurately and that we take bad shots in the media to the extent that unfortunately, it becomes an extremely adversary relationship.

You quoted some statistics in your statement on how people feel about the defense budget, and I am not surprised. Because being a citizen of your State or any State, and simply reading what appeared in the press or what appeared on TV about the problems of the Department of Defense, I think that I would be one of those who would be very much in favor of cutting back on defense, and I would be very disenchanted with the way the defense dollar allegedly is being spent.

One problem, I have found, in the 2½ months that I have been in office, is that we have an extremely difficult time in getting our story across so that it is as clear and objective as we can make it, and is then reported accurately. I think that some of it is the fault of the Pentagon in the way that we have treated items of importance, in a rather matter of fact manner, assuming that perhaps many people know a lot more about our business than they actually do.

So one of my thrusts is going to be to try to improve this relationship with the press so that what we report is interpreted accurately.

You brought up a point just a moment ago, which I think is a very good point. It had to do with the press briefing that we had

yesterday on the selected acquisition reports (SAR's) situation. First of all, I might say that I never paid much attention to SAR's before I became a member of the Department of Defense. I did not really know how to read them, and I did not regard them as that important. They were not considered a management tool.

However, they do indicate some measure of discipline. They also indicate that some things must be going right if because under the same ground rules from year to year, as the reporting shows, for this last year there was a significant decrease in it costs. Actually, the increases in costs as compared to previous years that occur from year to year in a specific group of weapons.

As all of you know, the SAR's include inflation; as well as increased quantities, and any number of things which add to the projected cost of the weapons system.

We in the Pentagon, did not lay down the ground rules for SAR's. These were laid down by Congress, and as I think you and Senator Cohen mentioned earlier, they are prepared according to a formula.

We, in reporting this to the press yesterday, were not attempting to hide anything, because we revealed the problems as well as we could. We highlighted the fact that the Trident submarine was being treated differently this year than it was last year along with the rationale for that.

Unfortunately however, that information was reported by the press as a claimed savings by the Department of Defense. We did not claim any savings. I do not believe the word was ever used.

What we were trying to do was to explain the SAR, and explain how we had avoided or managed to control increased projected costs of weapons systems through reduced inflation and more accurate inflation estimates to project quantity costs. We were addressing the whole formula for the SAR.

In recording the SAR's for this quarter, we did nothing unusual from previous quarters. We report them the same every quarter. For each quarter we report increases and decreases in several categories: Quantity, milestone schedule, estimating, support, and engineering.

One could always argue about whether or not it is appropriate to include certain items in the SAR's. We don't have any control over that. That is dictated by Congress. We decided not to include the derivative fighter program until a decision is made on which alternative is chosen, whether it is the F–16 or the F–15.

The point was made about that in the press. The fact is, the decision has not been made.

We cut the ALCM missiles from that SAR because of the decision to proceed with the advanced cruise missiles. This is a highly classified program, and, therefore, there is no SAR on that program.

There was no revision to the 15-ship Trident program. We dropped seven submarines from one SAR and put them into a new SAR so that we could clearly separate the costs of those new submarines equipped with a new D–5 missile from those equipped with the C–4 missile.

We also submitted a new SAR for the D–5 missile program so it was appropriate to separate the missile platforms also.

All of the costs have been included in the new SAR figures. There was no attempt to hide anything. We did take credit for the projected reduction in inflation which is consistent. We certainly took the rap for having to revise the inflation numbers upward in previous SAR's in order to be consistent. I believe that we should be able to include a higher rate, without being accused of trying to hide something, and that we should also take credit for any reduction in inflation.

Chairman ROTH. Let me ask you a question. I believe last year was the first time the Pentagon has ever included a higher rate of inflation than the administration itself in its program estimate. Isn't that correct?

Mr. THAYER. That is correct. That is because we went through the process of getting a special dispensation, so to speak. I think we are the only executive agency that has that privilege, to use a real, more realistic higher rate of inflation.

Chairman ROTH. I think that is a plus factor.

Mr. THAYER. That was a management initiative on the part of the Department of Defense, which I cannot take credit for; I wasn't here at the time.

But it is certainly proof that some of these initiatives that you mentioned earlier, Mr. Chairman, are taking effect. The point is that regardless of whether or not we take full credit for the reductions or penalties for the reductions, we could put all of those reductions back into the totals and we still have the lowest cost growth reported in the December quarter SAR's since 1975 in dollar terms and the lowest since 1973 in percentage terms.

The message that we tried to get across and were not very successful in doing, is that the long time trend of increasing costs has been broken. The past is not necessarily the prologue for the future. To repeat myself, I believe the management initiatives and the acquisition improvement program is certainly beginning to work.

I would like to present some charts to the committee as a result of my assessing in the past few months, DOD's management structure in the weapons acquisition process.

I would like to discuss some of my initial impressions with you.

Overall, I think DOD is in fairly good organizational health. I know that very often when things go wrong in an organization, the tendency is to reorganize. I don't have any intention of attempting that in the near future, because it has been my experience in the past that reorganization is not nearly the answer it is touted to be unless the attitude goes along with it.

By that I mean if people really want to work together as a team, and if they really want to improve the efficiency with which they conduct their business affairs, then they will do it regardless of organization. So I don't have any magic organizational initiative that I would like to present to the committee at this time. I think the problems that have been highlighted in the press, by the critics of the Department of Defense of goldplating unrealistic cost projections, creative accounting, collusion among certain defense contractors, and so forth are overstated; however, I guess there are always cases that can be pointed to with justification where there is some element of truth.

21-162 O—83——2

There is certainly some waste, fraud, and abuse in any organization as large as the Department of Defense simply by handling the volumes of dollars that pass through DOD hands everyday. And that is being attacked. I don't know if it is realistic to assume that we will ever completely eliminate it, but we can certainly minimize it to the point where it should not be an unusual problem.

I want to try to present some of the positive aspects of the initiatives that have been taken in the past few years by this administration, and also identify some of the problems that still exist and what we intend to do about them.

I think my very strong feeling is that we do have some very good conscientious people who are managing the affairs of DOD in this acquisition process, as we also did back in the 1970's. But when the cuts became as severe as they were, I think many management initiatives that would have normally existed were compromised because of a very strong desire on the part of the people who were involved to try and cope with an almost impossible situation where the defense budget was actually decreasing in real terms. We eventually did end up with a hollow army. The point is that there were some bad judgments made in those days, and I think you could take either side of the argument in justifying or condemning them.

There were some bad practices that were re-emphasized: programs streched out; unrealistic budgeting; trying to take advantage of a relatively small number of weapon systems by upgrading them in performance and then unrealistically pushing off the costs into future years.

So it has taken time. It will take time to overcome those problems which, in the 1970's, were actually cemented in many of the management practices of the Department of Defense.

Those were hard times, and I believe these are too. It is difficult to keep your head above water and operate at maximum efficiency when you are trying to do too much with too few dollars.

The Soviets have continued their massive buildup, and I think the number of $500 billion in excess of what we went through during that 10- or 12-year period is a pretty realistic number.

When the new administration came into office at that time, they were investing about 60 percent more a year than we were. I think that point has been made often, but it is surprising to me that it isn't given a little more credence. The fact that we did start from such a terribly low base has led us to requesting what seems to some to be an exorbitant sum of money to play catchup or to prevent the situation from getting worse in certain areas.

There were many forces operating to push the costs up during the 1970's, and as I said, some are still with us.

Beginning 2 years ago, we did make the commitment nationally to restore our defense posture which had been severely eroded.

I would hope that ultimately the issue gets back to debating the threat, in terms of what it takes to meet the threat, as opposed to how much we can afford.

You mentioned Mr. Spinney earlier and some of his criticisms of the Department of Defense, which based on history, is certainly correct. But I think Mr. Spinney, much to the concern of some of the critics of the Department of Defense, recommended that we actually spend more for defense rather than less.

The problem with Mr. Spinney's projections is that, apparently he doesn't believe that the initiatives that have been put into place, are going to result in very much change in the way we do business.

I maintain that that certainly is an opinion which he is privileged to have, and certainly is an opinion that only time is going to demonstrate whether what I am telling you in my formal remarks today, is going to happen or not.

I hope to convince you that we are heading in the right direction. We are taking off from a level of improvement as the result of the initiatives that were put into effect 2 years ago by Frank Carlucci, and the ones that I have selected to emphasize, are going to accomplish a lot of traditional goals.

But, again, it takes time. That is my role in the Department of Defense to help put together management practices and priortize our efforts, so that we do end up with substantial improvement in the way we spend the defense dollar.

The 32 initiatives are not really new. They are a list of sound business principles which have bubbled up over the years. They have been discussed individually or, in some cases, collectively, between industry and the Department of Defense for quite some time.

Two years ago, they needed to be emphasized and formalized, and that was done. The machinery for making them work had to be overhauled. That took the form of putting some teeth into the PPBS, or the planning, programing, and budgeting system to get realistic, as well as the DSARC, which is the Defense System Acquisition Review Council, headed up by Dr. DeLauer, and the Defense Resources Board, which I chair and which will be, as I mentioned earlier, making the hard choices as we come through the climax of the fiscal 1985 budget in July.

A lot of this has been set in motion, and I think it is time, I have been trying for the last couple of months, to evaluate the progress that was made and to modify where indicated.

Of those 32 initiatives, some are pretty well implemented. By implemented, I mean that the machinery is in place. But very frankly, there are some, that have to be pushed harder because they go down through several levels to get to everybody's attention.

Some of them are working very well, and in my opinion, don't need my attention or my interference; however you may want to look at them.

So what I have done, as I have told to some of you in private conversations, is to select six areas that appear to me to promise the most for the future, and I am trying to insure that those become solidily implemented. This is the challenge that I and everyone in DOD will face in the coming months.

The challenge, again, is not to rattle it around at the top level and put out a lot of directives which lose their affect somehow in the translation, but to make sure that these are pushed very vigorously all the way down to the so-called working level of the organization, as far down as it takes for these six major thrusts to be meaningful. Taking them one by one, starting with realistic budgeting.

In October of 1981, 1½ years ago, this committee emphasized that DOD had to do a better job of estimating the cost of weapons systems. We have made some progress in that area, and there is more to be made. I am going to continue to assure that we improve our ability to budget realistically. That is a first management principle.

The way we have been putting that principle into practice, in the budget is to plan for the most likely costs. Although we have always done some independent cost analysis, until recently, it was not that effective. But now, I believe that top management fully understands that we are going to put the responsibility on service secretaries and their people as well as our people at OSD to justify selection of any lower program estimate simply because it is lower. That would be supplied by an independent costing team.

We are going to develop the talents that it takes to improve our should-cost or budgeting for the most likely cost capability.

There is evidence that has already had some effect because we have added significant funding to outyear estimates in response to these independent cost analyses.

To come forward with higher estimates for example, in our planning programing and budgeting system, we have added $2.9 billion for six systems in the fiscal 1984 budget. We have done a better job in budgeting for inflation, and we are going to continue to emphasize that. It hits major weapon programs harder than the rest of the Federal budget, and we have sought after and gotten special permission to use more realistic inflation indexes, which we have used in the fiscal 1983 and 1984 budgets. We will use them to a greater extent in the fiscal 1985 budget.

We are also budgeting for technological risks. We have identified, within the services about $85 million in fiscal 1984 funds, to be used to keep programs on schedule when unforeseen technical problems arise. Again, we are preparing for independent estimates on all of these sensitive major weapon systems each year as part of the production, planning, and programing system.

Next is competition, which you have mentioned, Mr. Chairman and Senator Cohen. I agree at the outset that there is more that we can do in this area, and we plan to do it. We are, as you may know, going to competition on the AIM-7F, the advanced cruise missile and many categories of ammo.

We have planned seven other competitive efforts on major systems starting with the AIM-7, the Aegis ship, the infrared Maverick, Hellfire, AMRAAM, the fighter engine, a very large program, as well as many subsystems.

We can stimulate more competition in what could be called the more mundane or off-the-shelf items. We are putting programs into place to do that. Essentially, all initial programs in the R&D phase are competitive. We are looking at true tradeoffs for competition on major systems, but they are not all subject to competition after the initial award has been made. Many of the breakouts that could be performed in the major systems are subject to competition. We are going to pursue, along those lines, a lot more competition at the subsystem and vendor level regardless of whether it is done at the prime contractor's plant.

In readiness and support. We have had problems in this area for quite some time because of cutbacks in funds or overruns. Too often, production planning and support equipment have been robbed and pushed off into later years for the sake of prime hardware. When we have gotten through to the development phase, and we have decided to go into production, it has been discovered too often in the past that the production planning and the support planning has not been made.

Consequently, mistakes are made; costs are increased as a result, and subsequent administrations or subsequent Congresses or Department of Defense managers pay that price.

We are going to make a much more concerted effort to provide more discipline into protecting the production planning funding and the support effort that needs to be done during the development phase.

Funds are being redistributed to where they are really needed to support the system.

Mr. Chairman, we are now consolidating about six separate initiatives on this. One thrust toward policy implementation on this is largely complete.

The implementation is being monitored much more closely by the DSARC process. We are focusing at the production decision on fixing the reliability, maintainability and support resource problems which have been treated after the fact at this point. We are going to hit those problems much earlier and focus during the development phase on structuring programs to head off the problems that have been created in the past in this area.

In doing so, we expect to achieve substantial readiness gains, and in the long run, we go a long way toward reducing life cycle costs.

The continuing thrust of this, of course, would involve increasing the front end attention and the funding. It would mean more service discipline and commitment to holding production planning and support funding intact. We need to improve the techniques for readiness modeling, support cost estimating, and the application of contractor incentives.

Senator COHEN. Mr. Chairman, could I interrupt? Where does the cost analysis improvement group come into play in this chart? Where are those estimates?

Mr. DELAUER. Senator Cohen, the CAIG comes in all three of the areas you talked to but primarily in independent cost estimates this is where they make their major impacts, and where they show up in a participative way in the DSARC.

Senator COHEN. Does the CAIG provide a cost estimate for each weapon system?

Mr. DELAUER. Well, as you can see in this one chart—why don't you put that one back up—we have not done it for every program up to now, but we have done it for every DSARC program as the bottom bullet says.

Senator COHEN. But historically, the CAIG has been much more accurate than some of the service estimates.

Mr. DELAUER. Absolutely.

Senator COHEN. Of course, the Congress never gets a chance to see the CAIG. I was wondering, do you think, as a policy, should we insist that the CAIG analysis be done on every major weapons

system, and second, should that information also be available to the Congress? In this way, we can make an evaluation as to whether or not the service estimate is more accurate in DOD than what the CAIG has supplied to you.

Mr. DELAUER. As we point out here, one of the initiatives we are going to pursue is to use independent cost estimates to arrive at program cost estimates. Now, that is an iterative process. The CAIG has their views on certain things, and that is what the DSARC process is for, to be sure. I sit there to be sure we modulate that and insure the result that comes out shows up in the SAR report.

So you see the consequences of it. No, I do not support the fact that we ought to send all our pricing information and costing information over here and let it be picked apart. You have given us the job to manage. Now you want to be sure that we do manage, and that we keep our commitment to you that we will use independent costing.

Senator COHEN. Part of the problem with the SAR, No. 1, is its complexity. Kelly Burke has trouble figuring it out. I would assume most people would.

But No. 2, there is information not always included in the SAR. I think Secretary Thayer indicated some of the systems that we are currently working on have not been included in the SAR's because of the classification or because a final determination has not been made as to whether we go with the F-18 or F-15's or so forth.

So all I am suggesting to you is that by the time it comes to Congress, you are way down the production line, at least, before we even know what is in that SAR.

Mr. THAYER. What we want to do, Senator, is to renegotiate the formula for the SAR with the Congress, because it is not helpful in a good many ways. It is not a very complete tool to use to compare on a relative basis, from year to year, the way that the system is being managed.

We have talked about this recently. I have asked Dr. DeLauer and the bureaucracy to put together what we consider to be a more useful format, not only to you, but to us, as well.

Senator COHEN. How does the Office of Program Analysis and Evaluation factor into your costs analysis, Dr. DeLauer?

Mr. DELAUER. David Chu manages PA&E. They are also a DSARC principal, so they look at the administration problem, and analyze whether or not the effectiveness of the program in concert with other programs is proper. They participate in the DSARC as a principal. They also look at the questions of whether you should buy more or less, and is the inventory objective proper.

A point you just raised—let me just try to settle it here and show you the problems of the SAR. You mentioned the F-18.

Senator COHEN. Right.

Mr. DELAUER. We have inventory objectives as you know from the release that Secretary Thayer has made that we will be examining over the next 4 or 5 months. We will be deciding about what goes into those objectives. But the F-18 SAR—this is the SAR that we have just submitted has been talked about. The F-18 is generally characterized as a $40 billion program, actually $39.8 billion.

Eleven billion dollars has already been spent. We have almost $30 billion to go but it extends way out into the middle of the nineties. The statistics that you mentioned in your opening remarks, Mr. Chairman, on the growth and everything else, are derived from these final numbers that are for many years ahead of us.

That prediction into the future has led to uncertainties, and yet these numbers are treated as very precise things. Now, I think that is what Senator Cohen has been concerned about, and what we are trying to do is make the presentation to Congress more reflective of the actual, known program.

Now, we just do them the way you have asked us to do. It is a formula. You do this, you do that, and as a consequence, we are going to try to take the initiative so that we, indeed, can be more responsive to your constituents.

We need to get into what it is costing us now; what is it going to cost us in the future, and how much more accurate can we be, and thus, how you can hold management's feet to the fire.

Senator COHEN. Part of the difficulty with the F-18, as I recall, is that it was originally projected to be a low mix on the scale—a lower cost replacement of the F-14.

Yet the costs have gone anywhere from a projected $15 to $18 billion a copy now to a $39 billion projection. Those are the kind of cost growths that are difficult to comprehend.

Mr. THAYER. Again a very large part of that, is inflation, a very large part. So it doesn't give you a picture of true cost growth.

Senator COHEN. But that is part——

Mr. THAYER. That is really what you are interested in.

Senator COHEN. That is right. It is important that we get a true picture in the beginning, as close as we can, so that we know exactly what we are going to deal with. Part of the difficulty is we say, "Well, we think it is going to cost $14 or $15 billion, and we can afford that. We can build that aircraft, and we can put that new aircraft in."

But if we were told initially, "it is probably closer to a $40 or $41 billion program," a lot of us would say, you know, "it is a good idea and a good aircraft, but maybe we ought to stick with the F-14 because we have an open production line and we can continue with this and make some modifications, but why build a newer one at that cost level."

These are the kinds of decisions that come to us late.

How much has been spent on the F-18?

Mr. THAYER. $11 billion.

Senator COHEN. We are $11 billion into the program.

Mr. DELAUER. But you have a lot of airplanes.

Senator COHEN. I understand that, but the question is, how many new systems can we afford to buy as opposed to, perhaps, lowering the production and getting more of a certain aircraft or whatever it might be.

I just want to make one point, Mr. Chairman, and part of it goes back to the issue of credibility. I appreciate what Secretary Thayer was saying, but I think when we see news reports such as appeared in the New York Times today and also in the Wall Street Journal, it is not difficult to understand why some consider the SAR to be a less than credible document.

On page 1 of this selected acquisition report, it says, correctly, as you have indicated, that part of the reason for the first decrease in costs in December since 1973, a 10-year period, is No. 1, reduction in inflation, but No. 2, reduction in the number of Trident submarines that will be redesignated as Trident II.[1]

That is fairly candid as far as I am concerned.

But, then, I go over to another page of the Navy section, and it says "Trident program costs had a net decrease of $11 billion, roughly 39 percent, from $28 billion to $17 billion, due primarily to a scheduled stretchout and a quantity reduction of seven ships."

Now, there isn't a net reduction, because those seven ships are being included in the Trident II with a net increase.

Mr. DeLAUER. That is right, it is incomplete.

Senator COHEN. It is incomplete. On the one hand, we chastise the press for blowing this out of proportion, and, yet as I read that, it is really only half the story.

Mr. DeLAUER. On the other hand, some of the people that were there at that press conference, they had this document. I have it right here and both the Trident I and Trident II, which is the next incomplete part, and the Trident D–5 missile, which also isn't mentioned in the report.

Senator COHEN. No. I understand that, but then I have to go plow through that particular document and put on my reading glasses.

Mr. DeLAUER. No, no, no. The people that came to the press conference should have understood what we were talking about, should have taken the time to plow through this document.

Senator COHEN. No. But I am talking about what I have right here. I have got a SAR report, and what you say is that programs have been reduced because of a stretchout and a quantity reduction of seven ships.

Mr. DeLAUER. Incomplete. That is an incomplete statement and you ought to give us the credit for that.

Senator COHEN. I do.

Mr. DeLAUER. We will accept it. [Laughter.]

Chairman ROTH. Senator Cohen has struck on a point that I think we will want to zero in on a little more. I would like to give you a chance, first, to complete your statement as quickly as you can, Mr. Secretary.

Mr. THAYER. All right. I will run quickly through this.

Multiyear procurement is an old subject with all of you. We think that the implementation is proceeding very well. We have a total of 27 programs included for an estimated savings of $4.5 billion, which is certainly not an inconsequential amount. We do have some restrictions which we would like to see the Congress remove to relieve us of some additional, unnecessary reporting burdens.

To run through them quickly, we must report on all of the multiyear procurements that use the so-called economic order quantity purchases. In that respect, we would prefer to have a threshold required of DOD to report in detail only when these purchases exceed this threshold.

---

[1] See p. 25.

We are not recommending specifically at this stage what that threshold should be, but we do want to discuss it with you.

We must also report details on multiyear programs with cancellation ceilings in excess of $20 million. We would like to get this restored back to the $100 million level that was in the fiscal 1982 act.

All major weapons systems must be specifically listed in the appropriations bill for us to use multiyear procurement. What that means is that after the bill becomes effective, if sometime in the next year we feel that we have a very good candidate for multiyear procurement, it takes a legislative change for us to include it.

So I don't think we are really taking the best advantage of this rather promising approach to save money. We need help from Congress in this area.

I think all of you have listened to the words on economic production rates. It is straightforward. It makes only good sense to program equipment at rates that are most efficient from the manufacturers' capabilities.

In fiscal year 1983, we increased the rate of production in 18 programs, And as a result we saved through the fiscal 1981-87 time period about $2.3 billion.

We have two more programs that we want to accelerate in 1984. Between fiscal years 1984-88 we expect to get something on the order of $2.6 billion improvement.

The last one, program stability, is really the common denominator to this whole thing and is the critical initiative. In order to get program stability all of those things that I have mentioned before have to happen. If you have program stability, that means that those other things are part of the action. So all of these, while they contribute to program stability, do require the emphasis that I mentioned earlier and I intend to give it.

To avoid future disruptions, I intend to firmly defend the budget that we have submitted.

I will pledge to you that I will carefully scrutinize all the new starts to assure that they can be accommodated without interfering with ongoing programs. Right along with that, we will be taking steps to isolate those programs of lower priorities that must be stopped if the budget doesn't satisfy our needs.

We are going to avoid continuing the practice of stretching programs unless Congress tells us to do so. We don't want to keep alive weak programs at the expense of stronger ones.

I will say to you, yes, there are some, and we will be examining those very carefully.

Certainly, the way things look now, I think it is fairly safe to say that some of those programs will be dropped over the side.

This all means that we are going to have some tough decisions to make, and some of them are going to be politically unpalatable, but in order to do what needs to be done, we are going to need the support of Congress.

So with that, Mr. Chairman, I would like to try to respond to any further questions you might have.

Chairman ROTH. Thank you, Mr. Secretary.

Let me go back for a moment to the release issued yesterday by the Pentagon with respect to the last quarter, because I think Senator Cohen has outlined very well some of the problems.

Let me again express my concern that it is not enough to have all the facts in there buried somewhere in the body of the report.

One of my concerns, for example, is that in your own statement, in the opening remarks, you say that in the "December 31 selected acquisition reports submitted last week to the Congress, there is reported a net decrease in 53 SAR programs of $18.4 billion. The first time in 10 years, so we must be doing something right."

I gather from the information I have that there has been an improvement. But my concern, Mr. Secretary, is that that statement is, in the broadest sense, misleading, because even though it is required by Congress, much of the savings come from two points: One is inflation, which you mentioned, but the other is from a change in the Trident and some of the other weapons systems.

But those programs are not really cancelled out. As a matter of fact, what concerns me is that, to read in the New York Times, "Rear Admiral Kelso, the officer in charge of the strategic submarine program, later told reporters that there was no new program and no design change adding."

It seems to be an accounting change and that is all it is.

You may be required, I understand, by Congress to report on weapons costs, but I think it is critically important that in taking credit you be clearcut in exactly what you are talking about.

Even at this stage, I am a little confused as to what the report means.

It goes back to what Senator Cohen said in his opening statement: We do not have realistic figures. You, Mr. Thayer, Mr. Secretary, as a former businessman, in judging the efficiency or effectiveness of your company, really want to know what the cost is of producing a particular product. Just because you cancel certain products and do not make certain purchases does not have a direct bearing on the cost of item produced.

We have got some figures here from GAO that point out that the cost, the program cost, has grown substantially for most weapons. I do not know whether you can see it or not, but it says the cost of the F-16 has grown 128 percent over the original estimate; F-15 advanced tactical fighter, 255 percent; F-14 Tomcat 223 percent.

It seems what we need to know here and what the public needs to know if it is going to have confidence in what is being done, is how are your figures comparing with your original estimate? I do not see where the public relations statement issued yesterday bears on that problem. It is really pretty difficult to know what kind of increased cost effectiveness has been made over the last 3 months.

What figures would you say really are significant in the release yesterday from the point of view of cost effectiveness?

Mr. THAYER. Mr. Chairman, I would like to show you the release, which goes into great detail on what makes up the difference. Starting here, it takes it item by item and goes through several pages indicating category by category, whether there is an increase or a decrease.

It does not handle the Trident issue as well as it should, and we admit that. However, there was no attempt to hide anything, be-

cause it was through our discussion of the Trident that the press found out at the conference that it was not well explained. As a matter of fact, I think that if you will look at that release, you must agree that we have gone to great lengths to try and present the facts correctly.

[The news release referred to follows:]

NEWS RELEASE

OFFICE OF ASSISTANT SECRETARY OF DEFENSE (PUBLIC AFFAIRS)

WASHINGTON, D.C. 20301

PLEASE NOTE DATE

IMMEDIATE RELEASE

March 22, 1983

No. 121-83
695-0192 (Info.)
697-3189 (Copies)

SELECTED ACQUISITION REPORTS SHOW FIRST YEAR END DECREASE IN COSTS IN TEN YEARS

Secretary of Defense Caspar W. Weinberger announced today a significant net decrease in the December 31, 1982, Selected Acquisition Reports (SARs).

This is the first time in ten years that a decrease in weapons systems cost has been reported for a year-end reporting period.

These favorable results were partly caused by a lower defense commodity inflation index resulting from the administration's anti-inflation program. The reduced cost growth also reflects DoD's continued management efforts and acquisiton improvement initiatives to reduce cost growth in weapon systems.

If the reductions due to economic and quantity changes are excluded, there is an increase of $7.5 billion (1.3 percent) due primarily to engineering, schedule and support change. This increase is still the smallest total dollar increase since December of 1975 and the lowest percent increase since 1973.

The SARs are sent to Congress quarterly and provide the latest estimates of technical, schedule, quantity and cost information on major weapons systems. This quarter's SARs are the first to include new programs required to be reported under provisions of the Fiscal Year 1983 Defense Authorization Act.

The reports include total program acquisition costs updated to reflect actual cost on delivered systems, as well as anticipated costs for future procurement which may extend well into the 1990's.

-END-

A summary of the December 31, 1982, SARs is available in the Defense News Branch, Room 2E757, the Pentagon.

Department of Defense
Selected Acquisition Reports
as of December 31, 1982

Updated summaries of DoD plans for the development and procurement of selected major defense systems have been submitted to the Congress. These summaries, called Selected Acquisition Reports (SARs), are prepared every three months to provide the latest estimates of technical, schedule, quantity, and cost information concerning the major defense systems now approved within the Department of Defense.

FIRST DECREASE IN COSTS IN TEN YEARS

The December 31, 1982 SARs reflect a decrease of $18.4 billion since the September 30, 1982 report. This is the first decrease in cost in the December quarter since 1973. These favorable results are largely attributable to: (1) the lower defense commodity inflation index resulting from the Administration's anti-inflation program; and (2) a reduction in the number of Trident I submarines that will be replaced by Trident II submarines. In addition, it is also a result of our continued management efforts to reduce cost growth in our weapon systems. If the reductions due to economic and quantity changes are excluded, there is an increase of $7.5 billion (1.3%) due primarily to engineering, schedule, and support change. This increase is still the smallest total dollar increase since December of 1975 and the lowest percent increase since 1973.

ACQUISITION IMPROVEMENT INTIATIVES SHOW SUCCESS

We believe this reflects success in implementation of the cost growth reduction efforts of our Acquisition Improvement Program and other management actions we have taken since 1981. Among other initiatives, these include (a) budgeting for most likely cost; (b) budgeting for technological risk; and (c) more realistic budgeting for inflation. We have also improved our long range planning process as well as the decision making process within the Planning, Programming, and Budgeting System. Contract cost auditing has been given a higher priority and we have increased internal attention to cost and cost monitoring through regular senior management review of individual programs and the implementation status of our management initiatives. These signs are indeed encouraging, and they show that it is possible to break with the Department's past history of ever increasing program cost growth. We expect to see continued improvement in this area.

SUMMARY OF SAR DATA

The cost estimates provided for the 53 SAR programs include research, engineering, procurement, and military construction. Total program costs are updated to reflect actual cost on delivered systems, as well as anticipated cost for future procurement which in some instances extends well into the 1990s. In addition, all estimates include allowances for anticipated inflation. Program costs for FY 1984 and beyond account for 66% of the total $539.7 billion estimate of the 53 programs and reduced inflation in the economy has resulted in a 3.7% decrease in the out-year estimates. The December 31, 1982, reports include all changes to previous reports required by the Defense Appropriations Act for Fiscal Year (FY) 1983 and FY 1984 budget requests now before the Congress. In addition, revisions in these reports reflect the latest Five Year Defense Plan (FYDP).

Reports on the 53 major acquisition programs transmitted to the Congress for December 31, 1982, reflect a total current estimate of program acquisition cost of $539.7 billion. This compares to a current estimate of $455.6 billion for the 40 major acquisitions in the September 30, 1982 reports. A reconciliation of the program adjustments for the 13 programs added and changes in the current estimate are provided below:

	Current Estimate ($ Millions)
September 1982 (40 SARs)	$455,636.4
Plus Added SARs 1/	+102,471.1
Adjusted 53 SARs	558,107.5
December 1982 (53 SARs)	539,740.6
Net Changes	- 18,366.9
Reasons for Changes:	
Economic Changes	- 13,040.0
Quantity Changes	- 12,807.8
Schedule Changes	+ 3,857.8
Engineering Changes	+ 3,830.6
Estimating Changes	- 2,615.0
Support Changes	+ 2,437.6
Other Changes	- 30.0
Total	$- 18,366.9

1/ AN/TTC-39, LAV-25, STINGER, AMRAAM, Battleship Reactivation, CH-53E, Trident II Missile, SSBN 734 (Trident II), DDG-51, B-52 MOD, IUS, KC-135, LANTIRN (Also includes baseline adjustment for FVS ammunition of $-289.5M).

Details of the most significant changes by program are provided below:

Army

AH-64 Program costs had a net decrease of $19.5 million (0.3%) from $7,389.4 million to $7,369.9 million due primarily to an increase in quantity ($+345.6 million) offset by changes in economic, schedule, estimating and support costs ($-363.3 million).

Copperhead Program costs had a net decrease of $981.5 million (59.3%) from $1654.7 million to $673.2 million due primarily to a decrease in quantity and a schedule stretch in the remainder of the program.

Patriot Program costs had a net increase of $368.5 million (3.3%) from $11,312.2 million to $11,680.7 million due primarily to a schedule stretch out.

FVS Program costs had a net decrease of $2,460.7 million (18.4%) from $13,387.4 million to $10,637.2 million due to new escalation indices ($-503.0 million), accelerated procurement schedule for vehicle ($-104.3 million), deletion of product improvements ($-996.5 million), revised cost estimates and deletion of 25mm ammunition ($-545.7 million), reduced spares and support requirements ($-311.2 million), and incorporation of military construction costs into SAR ($+89.9 million).

M1 Program costs had a net increase of $862.8 million (4.4%) from $19,517.1 million to $20,379.9 million due to new escalation indices ($-767.8 million), schedule slip due to FY 1984 to FY 1990 tank production rate cap of 60 per month ($+646.2 million), phase II improvements ($+146.1 million), revised cost estimates ($+805.7 million), increased auxiliary support services due to schedule slip ($+8.9 million), and incorporation of military construction costs into SAR ($+23.7 million)

Navy

Lamps MK III Program costs had a net increase of $1,516.0 million (22.5%) from $6,745.6 million to $8,261.6 million due primarily to a schedule stretch out.

Phoenix Program costs had a net increase of $1102.7 million (35.5%) from $3,105.2 million to $4,207.9 million due primarily to an increase in quantity.

SSN-688 Program costs had a net increase of $5,098.1 million (20.9%) from $24,277.5 million to $29,375.6 million due primarily to an increase in quantity.

FFG-7 Program costs had a net decrease of $4,379.7 million (30.1%) from $14,202.0 million to $9,822.3 million due primarily to a decrease in quantity.

Trident Program costs had a net decrease of $11,275.9 million (39.7%) from $28,424.3 million to $17,148.4 million due primarily to a schedule stretch out and a quantity reduction of 7 ships.

F-14A Program costs had a net decrease of $2,045.5 million (5.7%) from $35,830.7 million to $33,785.2 million due to new escalation indices ($-613.9 million), rescheduling procurement of twelve aircraft (six from both FY 1984 and FY 1985) to FY 1995 ($+492.3 million), increased funding for radar and avionics improvements ($+337.8 million), revised cost estimates ($-2,228.4 million), an increase in spares requirements for FY 1984 thru 1988 and a decrease support requirements for FY 1989 thru FY 1995 results in a net spares and support decrease ($-33.3 million).

F-18 Program costs had a net increase of $106.4 million (0.3%) from $39,720.8 million to $39,827.2 million due to new escalation indices ($-633.4 million), a program stretch into FY 1991 ($+975.1 million), preplanned product improvements and deletion of Bomb Rack Unit (BRU-33) ($+1022.8 million), revised cost estimates ($-1,330.1 million), and increased spares requirements ($+72.0 million).

CH-53 Program costs had a net decrease of $571.2 million (15.0%) from $4,366.1 million to $3,794.9 million due to new escalation indices ($-76.6 million), an accelerated production schedule ($-56.3 million), development and nonrecurring production support costs associated with the Airborne Mine Counter Measures ($+69.8 million), revised cost estimates ($-493.5 million), and a net reduction in support costs and spares requirements ($-14.6 million).

CG-47 Program costs had a net increase of $449.7 million (1.5%) from $27,584.0 million to $28,033.1 million due to new escalation indices ($-419.8 million), schedule stretched from 4 ships in both FY 1986 and FY 1987 to 3 ships in both FY 1986 and FY 1987 and 2 ships in FY 1988 ($+182.2 million), combat system upgrades ($+118.0 million), revised cost estimates ($+274.4 million), and revised outfitting and post delivery program ($+294.9 million).

HARM Program costs had a net increase of $348.2 million (11.0%) from $3,141.2 million to $3,489.4 million due to new escalation indices ($-30.9 million), a quantity increase of 898 missiles ($+223.0 million), schedule slip due to FY 1983 congressional budget cut ($+146.0 million), revised cost estimates ($+77.3 million), and reduced spares and support requirements ($-67.2 million).

Air Force

AIM-7M Program costs had a net decrease of $816.7 million (48.1%) from $1,700.1 million to $883.4 million due primarily to a quantity decrease.

ALCM Program costs had a net decrease of $4,170.4 million (49.1%) from $8,497.9 million to $+4327.6 million due primarily to a quantity decrease.

HARM Program costs had a net decrease of $1,434.6 million (30.6%) from $4,691.4 million to $3,256.8 million primarily due to the deletion of 5,325 missiles ($-1,776.1 million), revised escalation rates (-$301.4 million), and rephasing of the program schedule ($+640.1 million).

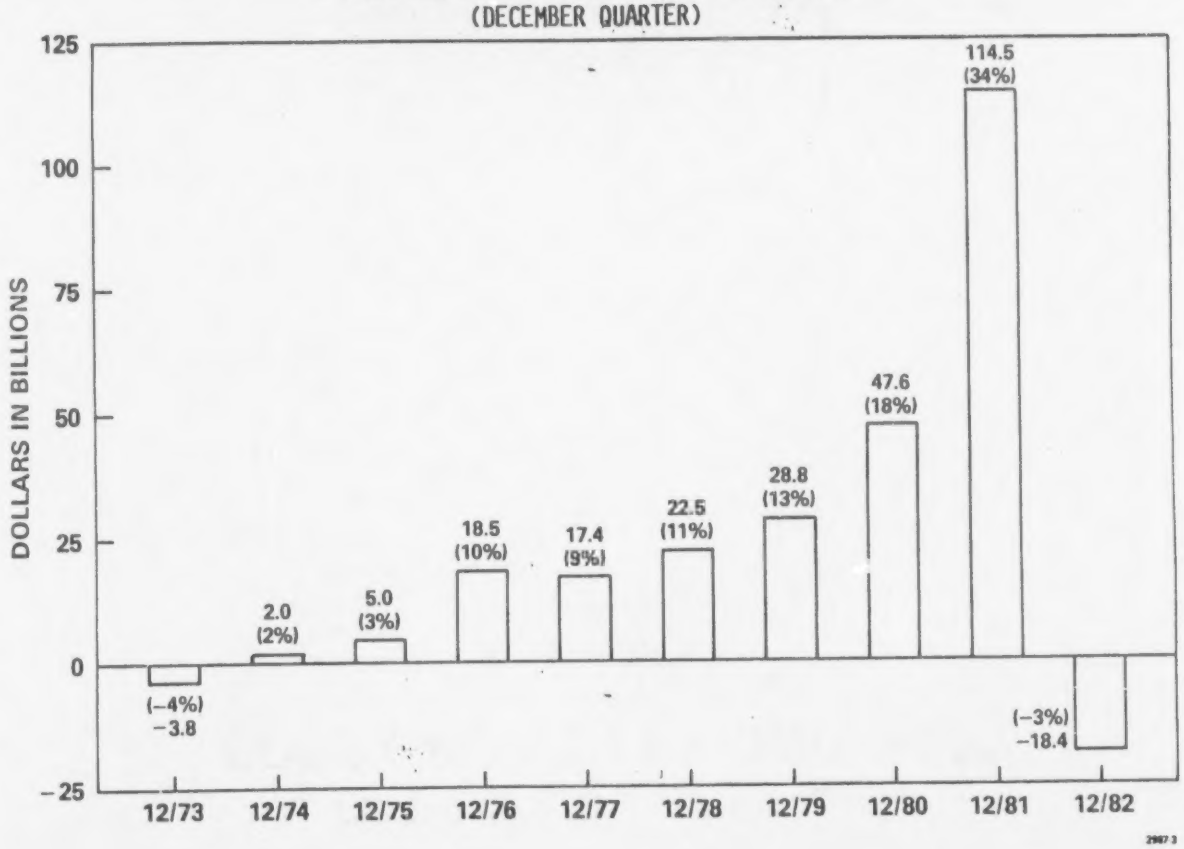
F-15 Program costs had a net increase of $946.9 million (2.3%) from $40,553.9 million to $41,500.8 million primarily due to the addition of 96 aircraft in FY 1991 ($+3,280.8 million), revised escalation rates ($-667.6 million), a reduction of 39 aircraft for FY 1983 thru 1985 ($-975.7 million), and a net savings due to multiyear procurement for FY 1984 to 1987 ($-338.7 million).

F-16 Program costs had a net increase of $1,513.1 million (3.6%) from $41,981.1 million to $43,494.2 million primarily due to the addition of 180 aircraft in FY 1991 ($5,231.8 million) and the planned production incorporation of an improved competition fighter engine ($+836.9 million) and is offset by revised escalation rates ($-2,098.9 million), and deletion of the derivative fighter ($-2,971.0 million).

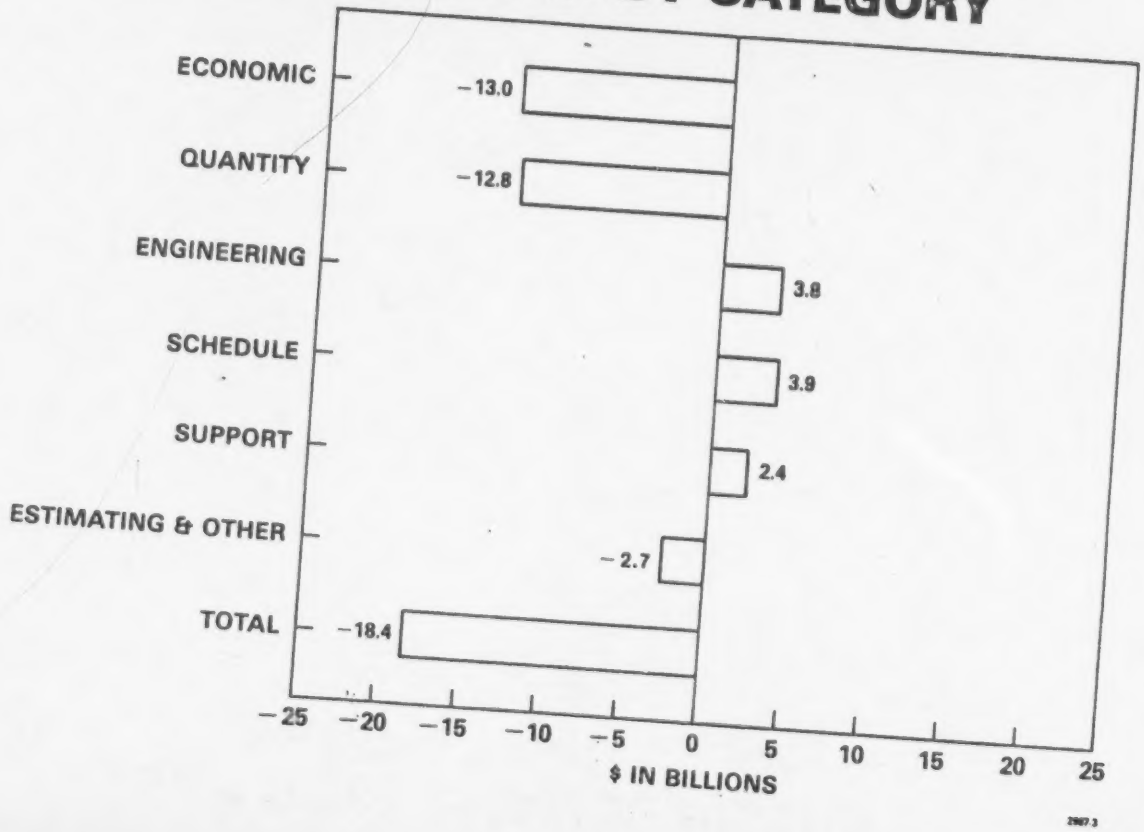
E-3A Program costs had a net increase of $512.6 million (8.2%) from $6,277.7 million to $6,790.3 million primarily due to repricing of the FY 1983 President's budget ($+242.6 million), additional development efforts ($+178.4 million), and a schedule slip for the last 12 production aircraft ($+134.6 million).

21-162 O—83—3

SAR COST CHANGE HISTORY FROM 12/73 TO 12/82



DECEMBER 1982 SARs
COST GROWTH BY CATEGORY



SAR PROGRAM ACQUISITION COST SUMMARY
As of DEC 31 82
($ In Millions)

Weapon System	Status	Program Base Year	CURRENT ESTIMATE			COST CHANGES THIS QUARTER		
			Program Cost					
			Program Base Year Dollars	Actual and Projected Escalation	Total	Program Changes In Base Year Dollars	Actual and Projected Escalation	Total
CONGRESSIONAL SAR SUBMISSION								
ARMY								
PATRIOT (Fire Sections)	PdE	1972	4579.7	7101.0	11680.7	-110.5	479.0	368.5
PERSHING II	DE	1979	1732.2	1005.4	2737.6	-38.1	-34.3	-72.4
HELLFIRE	PdE	1975	1004.1	1227.4	2231.5	81.7	102.2	183.9
STINGER	PdE	1972	1307.3	2500.5	3807.8	-62.6	85.3	22.7
CH-47 MODERNIZATION	PdE	1975	1295.9	1986.6	3282.5	16.0	-167.5	-151.5
UH-60A (BLACK HAWK)	PdE	1971	2347.5	5036.9	7384.4	-65.4	-285.5	-350.9
AH-64 (AAH)	PdE	1972	2700.5	4669.4	7369.9	243.3	-262.8	-19.5
AHIP	DE	1982	1753.6	791.1	2544.7	89.7	-76.6	13.1
FVS (MICV)	PdE	1972	3447.7	7189.5	10637.2	-172.1	-2288.6	-2460.7
LAV(A)	PdE	1982	471.2	153.6	624.8	-	-	-
M-1 Tank	PdE	1972	6276.8	14103.1	20379.9	543.4	319.4	862.8
COPPERHEAD (CLGP)	PdE	1975	440.6	232.6	673.2	-460.1	-521.4	-981.5
DIVAD Gun	PdE	1978	2248.8	1875.6	4124.4	-72.5	-32.4	-104.9
MLRS (GSRS)	PdE	1978	2268.6	1928.4	4197.0	76.5	-18.6	57.9
JTIDS(ARMY)	DE	1981	95.6	20.4	116.0	15.4	1.5	16.9
AN/TTC-39	PdE	1974	594.2	588.3	1182.5	-40.0	188.1	148.1
NAVY								
F-14A	PdE	1969	12995.7	20789.5	33785.2	-362.4	-1683.1	-2045.5
F-18	PdE	1975	14063.3	25763.9	39827.2	-100.5	206.9	106.4
AV-8B	DE	1979	5608.1	4503.1	10111.2	-184.9	-275.9	-460.8
LAMPS MK III	DE	1976	3623.5	4638.1	8261.6	332.9	1183.1	1516.0
CH-53E	PdE	1973	1382.5	2412.4	3794.9	-131.1	-440.1	-571.2
CAPTOR	PdE	1971	633.0	831.7	1464.7	-43.7	-67.5	-111.2
AMRAAM(N)	DE	1978	1296.2	1955.2	3251.4	-	-	-
HARM	DE	1978	1677.5	1811.9	3489.4	141.5	206.7	348.2
HARPOON	PdE	1970	1311.1	2072.3	3383.4	-35.5	-86.3	-121.8
PHOENIX (AIM-54C)	DE	1977	1934.2	2273.7	4207.9	416.1	686.6	1102.7
SIDEWINDER AIM-9M	PdE	1976	286.8	337.9	624.7	73.1	98.5	171.6
SPARROW AIM-7M	PdE	1978	779.2	717.8	1497.0	43.2	79.8	123.0
TOMAHAWK	PdE	1977	5335.0	6186.0	11521.0	131.7	-371.0	-239.3
TRIDENT	PdE	1974	11222.4	5926.0	17148.4	-3581.1	-7694.8	-11275.9
TRIDENT II SUB	PdE	1983	10548.9	3536.3	14085.2	-	-	-
TRIDENT II MSL	DE	1983	24262.9	13382.2	37645.1	-	-	-
TACTAS	DE	1976	570.5	554.6	1125.1	10.1	-11.9	-1.8
SSN-688	PdE	1971	10902.8	18472.8	29375.6	1691.4	3406.7	5098.1
CG-47 (DDG-47)	PdE	1978	14455.4	13577.7	28033.1	289.3	160.4	449.7
FFG-7	PdE	1973	4386.7	5435.6	9822.3	-1147.7	-3232.0	-4379.7
CVN-71	PdE	1979	1847.8	716.6	2564.4	80.1	-149.3	-69.2
CVN-72/73	PdE	1982	5216.0	2051.2	7267.2	-49.5	-102.2	-151.7
BATTLESHIP REACT.	PdE	1982	1476.7	399.9	1876.6	-	-	-
DDG-51	PdE	1981	6443.5	4510.0	10953.5	-	-	-
JTIDS(NAVY)	DE	1981	1415.9	845.0	2260.9	27.8	-43.4	-15.6
LAV(N)	PdE	1982	564.3	180.1	744.4	-	-	-
AIR FORCE								
F-15	PdE	1970	13600.1	27900.7	41500.8	117.6	829.3	946.9
F-16	PdE	1975	17041.0	26453.2	43494.2	918.1	595.0	1513.1
E-3A (AWACS)	PdE	1970	3166.4	3623.9	6790.3	165.5	347.1	512.6
EF-111A	PdE	1973	727.7	815.9	1543.6	31.4	43.1	74.5
KC-135 RE	PdE	1981	5226.1	2603.1	7829.2	-	-	-
B-1B	PdE	1981	20444.9	7889.1	28334.0	-47.1	-1146.6	-1193.7
B-52 OAS	PdE	1978	1164.1	613.8	1777.9	-	-	-
B-52 CMI	PdE	1978	372.7	238.3	611.0	-	-	-
HARM (AGM-88)	DE	1978	1507.1	1749.7	3256.8	-449.1	-985.5	-1434.6
MAVERICK (IIR)	DE	1975	2197.4	3649.8	5847.2	84.4	-408.0	-323.6
AMRAAM(F)	DE	1978	3485.6	4426.2	7911.8	20.2	-448.6	-428.4
SIDEWINDER AIM-9M	PdE	1976	253.6	219.4	473.0	-6.3	-29.5	-35.8
SPARROW AIM-7M	PdE	1978	542.9	340.5	883.4	-383.3	-433.4	-816.7
DSCS III (Space Seg)	PdE	1977	992.8	797.7	1790.5	-4.2	-71.1	-75.3
NAVSTAR GPS	DE	1979	1667.6	814.3	2481.9	124.0	23.9	147.9
IUS	PdE	1975	963.0	1049.3	2012.3	-	-	-
ALCM	PdE	1977	2798.6	1529.0	4327.6	-1723.0	-2447.4	-4170.4
GLCM	PdE	1977	1915.9	1679.3	3595.2	14.8	-98.2	-83.4
JTIDS(AIR FORCE)	DE	1981	275.8	85.4	361.2	-4.4	-	-4.4
LANTIRN	DE	1980	2101.5	1721.7	3823.2	-	-	-
PROGRAM COST SUMMARY								
ARMY			32564.3	50409.8	82974.1	44.7	-2512.2	-2467.5
NAVY			144239.9	143881.5	288121.4	-2399.2	-8128.8	-10528.0
AIR FORCE			80444.8	88200.3	168645.1	-1141.4	-4229.9	-5371.3
GRAND TOTAL			257249.0	282491.6	539740.6	-3495.9	-14870.9	-18366.8

Chairman ROTH. To be candid, Mr. Secretary, if I looked at your statement where you take credit for an $18 billion savings, it seems to me that that can be misconstrued. I applaud the fact that you are taking the initiative to try to develop some figures that are significant, because what I am saying is I think it is very difficult, I want to underscore what Senator Cohen said, for Members of Congress, let alone the public, to really understand what is taking place. I think the fact that this story comes out about an $18.4 billion decrease goes to the heart of the problem of confidence and trust in the figures.

Let me ask you this question——

Mr. THAYER. Senator, I would like to just say something——

Chairman ROTH. Please do.

Mr. THAYER. We never presented this as a savings. We presented it as simply a realistic evaluation of cost growth, or the lack of it, from year to year as a result of bad budgeting, inflation, or changes in quantity, or whatever.

Chairman ROTH. I will yield to my colleague, but I just want to, again, underscore that in your opening statement, it says:

> In the 31 December Selected Acquisition Reports submitted last week to the Congress, there is reported a net decrease in 53 SAR programs of $18.4 billion. The first time in 10 years, so we must be doing something right. While these favorable results are largely attributable to the lower defense commodity inflation index resulting from the administration anti-inflation program, the remaining cost growth is still much lower than it has been in recent years.

I do not want to get in a long argument with you, but I think the fact is that a significant part of what was the, if you want to call it a bookkeeping adjustment, was program adjustments. I would assume that you are not canceling the Trident contract, that probably all you are doing is amending it. Is that not correct?

Mr. THAYER. All we are doing is putting it in the right category. The first seven submarines have the C–4.

Mr. DELAUER. Yes. What happened, Mr. Chairman, is the way that you portray the 240 information, the first time you put in a change report. We kept trying to tell you that. No one wants to accept it. But Congress is interested in what you said you were going to do, and not what is going to happen to it. It is a change report, so consequently, when you report a particular item, in this case for Trident I with the C–4 missile in it, the program has been modified because of the strategic modernization program into the Trident II and the D–5 missile.

Now, in this report, they were put in as a line item, but there was no change. They were put in as a base number. Now, the base has increased, so the amount of money that the Defense Department is expecting to spend on the Trident submarines has increased.

The change has been less in one program, and that delta change from what has been reduced in the Trident I to the Trident II shows up as an increase in the base and not as, essentially, a program change because of escalation, quantity changes, or other things that have been designated in the way we report it.

Now, you can say that this is not clear in the news release. We will accept that.

Chairman ROTH. That, No. 1 is what I am attacking, because my concern is, as you recall in my opening statement, is to try to develop the confidence and trust of the public when this type of release comes out.

I am just saying that as a public relations mechanism that I think it is wrong, it is controversial, it is provocative to try to say that because of this $18.4 billion a better job is being done. I think you are probably right, that a better job is probably being done. I am not quarreling with that. I am quarreling with the perception, which is very important in this area, particularly in making this kind of statement.

Senator Cohen?

Senator COHEN. I was just going to add one thing. I wanted to yield to my other colleagues, because I have had a chance to question the witnesses. Again, Dr. DeLauer, I think what you are saying is "Congress is making us do this." If you do not like the SAR's, change them. We should require more information in the SAR's. One example involves the ALCM's. The SAR's presently state that you have had a net decrease in the ALCM program due to a quantity decrease. I would put an asterisk there and say at the bottom of the page, "Note, there will be increased costs due to higher classified stealth technology." What appears in the current reporting is, well, they are claiming decreases when, in fact, it may be a decrease on this particular aspect, but it is going to cost a lot more when we get more production of the other one. What Congress and the public need is a full picture, so when the President gets to it, the President cannot say, "It is misleading the American people, it is going to cost more."

Well, if a weapons program is going to cost more, DOD ought to say so, and why, and change the report to the public.

Mr. THAYER. We took the opening statement—well, we did not—and still got hit last year for reporting a $114 billion increase. The explanation for it, in a good many articles, just did not appear.

Mr. DELAUER. It did not appear.

Mr. THAYER. So I think the benefit of this discussion is that we can agree, I hope, that the SAR's need to be changed. [Laughter.]

Chairman ROTH. Amen.

Senator COHEN. I want to yield.

Chairman ROTH. I think you have used your time.

Senator SASSER. Mr. Chairman, how are we allocating our time for questioning today?

Chairman ROTH. The practice here is to take, the Senators in order, as they arrive at the hearing, which has been the established policy for the last 2 years.

Senator SASSER. Thank you.

Chairman ROTH. I will ask each person to try to limit it to 10 minutes, so each person has a full opportunity. Senator Rudman?

Senator RUDMAN. Mr. Chairman, thank you. I know in reading the transcript of the last 15 minutes of this hearing, you know, I have to digress, Mr. Chairman. It reminds me of the fellow who was trying to select a consultant. He asked two fellows in from two of the big firms, and he asked them the sample question: The question is, How much was 2 and 2, and they both said 4. He hired the

third fellow because he asked him how much was 2 and 2, and he asked him, what number did he have in mind. [Laughter.]

Maybe we all should have MBA's as a prerequisite to becoming Members of the Senate, because it seems—and I am just going to spend a few moments on this, a very few moments—it just seems to me that what everyone really is saying is I guess what the Congress really wanted to know when they established the SAR's, is what is the increase or decrease in inflation adjusted unit cost per weapon per year, and that is not what we are getting.

I think you are absolutely right, Dr. DeLauer, and I am, since I was part of the initiative along with Senator Nunn, to get these reports to us quarterly, I think we are going to maybe sit down with you and maybe get something that means something. I agree with the chairman that the public relations people down there get carried away. I have to say although there was no deliberate attempt to misrepresent—I am sure there was not—I can understand the PR people trying to give the public at least some good news once in a while. I think there was good news in that report.

Unfortunately, the good news gets out by way of charges of misrepresentation. Mr. Secretary, we are all familiar with your background. It is an extraordinary background. You have recently headed a very successful large defense corporation. You are a test pilot. You were a fighter ace during the war. You certainly ought to know from A to Z about this whole problem we are dealing with.

I want to just ask you a very simple hypothetical question, because it really gets me down to the genesis of what really is wrong. There were just all kinds of articles written recently by all kinds of people, like Mr. Augustine, who really seem to know what they are talking about, but rather than quoting them, in your former position at Vought-LTV, would have considered bringing a man in from the command of an infantry rifle division located someplace in Germany or in the Far East into the Defense Department, put him in charge of an $8 billion program for 3 years knowing that at the end of the 3 years he would be going out to command another division someplace? Would you engage in that kind of management initiative in your former position?

Mr. THAYER. No.

Senator RUDMAN. But that is precisely what we are doing in some cases now, is it not?

Mr. THAYER. That is right.

Senator RUDMAN. Mr. Secretary, I want to ask you this question. Don't you think, with all of Mr. Carlucci's initiatives, all 32, some better than others, and with all of the management initiatives that we are trying to get into place, is it not the problem to some extent that we really have not historically had the right people in the right place, in terms of managing these enormously complicated and extremely expensive programs and people who have to deal with people like you, on the other side of the table, very sharp experienced businessmen who have been doing it for years and years and years, is not that really what the problem is, to a large extent?

Mr. THAYER. Well, that is part of the problem, and we are—in all the services and OSD—attempting to provide and train business managers as well as program managers. I visited the Defense Systems Management College shortly after I assumed office, because I

am very conscious of the problem. I found that there are almost 200 officers who are spending several months attending management school.

This is an effort that is going to require more attention, than just sending people to school. We need to provide a good career path for these people.

Senator RUDMAN. And that is, of course, precisely the point, Mr. Secretary, because I had the privilege of speaking to that group up here on the Hill yesterday morning. I think we were talking to the group from Fort Belvoir. Senator Levin and I both took part in the program for them. I talked to a number of them afterward. The precise problem is that in terms of a career track for a—we are talking about the Army, something I am most personally familiar with.

Mr. DELAUER. The Army is one.

Senator RUDMAN. In terms of a career track, you take an Army colonel who wants to get that star, and you put him in managing a program, and he would far prefer to be commanding a brigade at Fort Bragg, and I do not blame him, because historically, the way to promotion has not been in the management of systems that start out costing $x billion and end up costing $10 billion, no fault of his.

My question is, is not the most important initiative in all three of the services—the Air Force has the least of the problems, I think, because of their historical—their defense systems command, and they do have a difficult system—but as far as the Navy, the Army and the Air Force, should not we start reviewing the entire way that we place people in management, and if we do not have a parallel career track for promotion, why not bring in civilians, ask the Congress to raise their pay, and let the civilians manage the programs over there? Is not that really the heart of the problem over there?

Mr. THAYER. It is certainly part of the problem, that is well recognized.

Let's say it is much more fully recognized now.

Senator RUDMAN. Now than it has been.

Mr. THAYER. Now than it has been. And we will push that very strongly, Senator. It could well be a separate initiative, but it is implicit in the initiatives that I went through.

You can have all the best initiatives in the world, but if you don't have the people to execute them, then they are worthless.

Senator RUDMAN. Mr. Secretary, that last sentence is the most important thing you could say this morning at this hearing as far as I am concerned. We can talk about numbers and reports and initiatives, and you know, you go back and read.

As I have read the history of some of these hearings before the armed services hearing, before the Defense appropriations hearing, going back for 10 years—very interesting reading.

I took some home for many months and read back some history. I sit here 10 years later, and it is almost as if I had been sitting there 10 years before.

The fact is that you, with your background, have a chance, it seems to me, of making a major change in the process, and I hope you do.

Mr. Chairman, we are short on time and a lot of people have other commitments, so I am not going to use all my time, and I will yield the rest of my time back.

Chairman ROTH. Thank you, Senator Rudman.

Senator Bingaman, I apologize.

Senator BINGAMAN. Let me just ask about a few particular weapons systems, if I could, Mr. Secretary.

In reference to the chart displayed up here of program cost growth in the 19 top weapons systems, I want to see if I understand it correctly.

As I understand it, the second item listed there shows that the percentage change in unit cost in the F-15 has been a 255 percent increase.

Is that an accurate reading of the chart? If so, is there a ready explanation for that kind of an increase?

Mr. THAYER. I am going to let Dr. DeLauer answer the question, he has a little more background on this than I do.

Mr. DELAUER. This particular table was out of the chairman's statement, but it represents essentially last quarter's systems acquisition report that was extracted from it.[1]

The F-15—let me give you a little bit of background:

That report was based on the base cost for the F-15 that was made in 1970; 1970 is the base year for the F-15. So what is included in this cost increase is the inflation from 1970 to whenever the last F-15 is going to be delivered, which is maybe 1988 at the present time.

So there is close to 18 years of inflation figured in to what the final cost is going to be. Additionally, what is figured are those engineering changes that came from 1970 up to now.

We made improvements to the airplane. Those changes came. Quantity changes came. What we added, for instance, in this latest report, is about $500-odd million to the F-15 line.

It will change that number right there that you see because of quantity changes that the Air Force has planned to have in their F-15 force structure.

So all those changes are included in that number, and that is exactly what it comes up to: the fact that a program, over a period of 18 years, is going to end up costing a couple of hundred percent more than it was originally estimated in the beginning.

Senator BINGAMAN. I am right that the 255-percent figure is a unit cost per plane increase; is that right?

Mr. DELAUER. What they have on that cost is unit cost; that is right.

Senator BINGAMAN. What would be the base year for the MX missile?

Mr. DELAUER. The MX missile. The MX missile is not now a SAR program, so the base year of the MX missile will probably be the year that we put it in.

Senator BINGAMAN. It shows a 10-percent decrease in the MX missile here.

---

[1] See p. 5.

Mr. DeLauer. That was in the last SAR. I think we have the MX out of this one because of the fact that Congress didn't approve it to go into production.

Senator Bingaman. So how do we show a decrease if it is not—I don't understand how we can compare a previous year price to a nonexistent price and get a decrease.

Mr. DeLauer. This was September's SAR, and it might have had the MX in it. It might have had the MX/R&D program in it.

Which one have we got?

Senator Bingaman. The MX is the fifth one down on the list there. I just didn't understand. If it shows that it is going to cost $34 billion now and that that is a 10-percent reduction, I guess it used to cost $37 or $38 billion.

Mr. DeLauer. This is a GAO number. We have never had a SAR for the MX, because we have not put it into production. I don't know how the GAO got the change. It could be just a different inflation rate. They could have changed it from one reporting period to the next, or something like that. I don't know.

Senator Bingaman. You don't really know the answer to that?

Mr. DeLauer. The MX missile has never been a SAR system so there is no SAR baseline to compare it against. The data you quote from Chairman Roth's opening statement doesn't clearly indicate what GAO used as a baseline that then indicates a 10-percent decrease for MX. It will be necessary for GAO to clarify the MX decrease that they reported to Chairman Roth.

Senator Bingaman. How about the ALCM, which is the bottom one on that same chart? It shows a 1,504-percent increase per air-launched cruise missile.

Mr. DeLauer. For the ALCM, its base year was 1977, and it shows an escalation of almost 33 percent due to inflation. That is what brought the number up. I don't think there has been a quantity change in ALCM, but I would have to take a look at it.

Senator Bingaman. I am trying to focus in on this unit change, percentage change in unit cost which is the right-hand figure. It says that the percentage change in the unit cost of ALCM is going to go up 1,504 percent.

Is that wrong or is there an explanation for it?

Mr. Thayer. I think we need to give you a complete breakdown on that. I don't think we can do that here.

Senator Bingaman. OK. Well, I would appreciate, Mr. Chairman, if we could get that for the record, because I have difficulty understanding how it is arrived at.

Mr. Thayer. I have difficulty understanding that, too. I cannot believe that that is a good number.

Senator Bingaman. It seems excessive to me.

Chairman Roth. It is so requested.

[The information referred to follows:]

The December 31, 1982, SAR shows a quantity reduction of 1,901 missiles from the 1977 development estimate of 3,459 missiles down to the current estimate of 1,547. This decrease in quantity reported in the SAR caused the 1977 development estimate of $958K unit procurement cost to rise to a current procurement cost of $1,733M (in escalated dollars). This is an 80.89 percent increase in unit cost and is obviously much different than the 1,504 percent reported by Chairman Roth in his opening statement. Chairman Roth's $8,497M total program cost does not reflect the

quantity decrease. We cannot duplicate the calculations that led to the 1,504 percent figure.

Senator BINGAMAN. OK. Let me ask one other question.

When the Secretary of the Navy, Mr. Lehman, was before the Armed Services Committee, I asked him about the two carriers that were authorized in December by the Congress.

As you know, there has been discussion that the Congress ought to rescind the authority for those carriers and save some money. I think Mr. Bundy and several others made that suggestion. I asked Mr. Lehman what kind of penalty there would be involved in canceling those two carriers. This was 3 or 4 weeks ago, about 10 weeks after the Congress passed the continuing resolution and gave the authority to go ahead with them.

His response was that it would cost more to cancel them than it would to build them.

Is that your understanding of the situation we are in, and if so, how did you get into that kind of a contract with a defense construction firm?

Mr. THAYER. I don't know on what basis he made that projection.

Senator BINGAMAN. Could you get us——

Mr. THAYER. If you want a number on what it would take to cancel the two carriers, I will get you one.

Senator BINGAMAN. I think that would be useful.

[Information submitted by Mr. Thayer subsequent to the hearing follows:]

CANCELLATION OF CARRIERS

As the cornerstone of the Navy's rebuilding program, two nuclear aircraft carriers were requested of Congress in the fiscal year 1983 budget. This request generated considerable discussion and was subjected to numerous authorization and appropriations votes at the subcommittee and full committee level and on the floor of both the House and Senate. In all cases the Congress supported the request and approved fundings for the two CVNs in late December 1982.

The Navy's business plan for awarding the construction contract for these two CVNs was developed in late 1981 and, in order to attain eariest possible delivery, was predicated upon award of the contract as soon as possible after funds were available.

As a result the Navy was prepared to act quickly—the two ship construction contract for CVN 72 and CVN 73 was awarded to Newport News Shipbuilding on 27 December 1982. The obligated amount of money for contract award was $3.143 billion. In addition to the basic construction obligation, escalation funds (part of the original budget approved by Congress) in excess of $1.4 billion were committed to cover the projected inflation impact over the contract's nine year life. Under this $3.143 billion two ship contract, Newport News Shipbuilding has, as of mid-March 1983, subcontracted with more than 600 vendors in 32 of the 42 states where orders will be placed for more than $550 million worth of Contractor Furnished Equipment (CFE). This includes over 12,000 tons of steel of which several thousand have already been received and are in various stages of fabrication and assembly. Major items of CFE under subcontract include main turbines and tears, weapons elevators and aircraft hoisting equipment, switchboards and main condensors.

Government Furnished Equipment (GFE) is purchased by the Navy under contracts separate from the shipbuilding contract. These direct Government contracts with major suppliers of material and components result in the delivery of components that will then be provided to the shipbuilder. Through mid-March 1983 more than $1.4 billion in GFE contracts have been awarded to more than 80 contractors and subcontrators. Of this amount $960 million has been awarded to two major prime nuclear component contractors (General Electric and Westinghouse) and $440 million has been obligated under an Economy Act Order to the Department of Energy.

There will be no significant additional obligations made under the shipbuilding contract during the next twelve months since the contract is fully funded in the amount of $3.143 billion. But the shipbuilder will commit funds to subcontractors beyond the $550 million already subcontracted. The shipbuilder estimates that an additional $50 million in subcontracts will be committed during the next few months. There will be additional million of dollars subcontracted by the shipbuilder beyond the middle of 1983 but there is no time related estimate for these subcontracts at this time.

Over the next twelve months the Navy estimates that $400 million will be obligated for GFE in addition to the $1.4 billion already obligated.

In summary, more than $4.5 billion of the approximately $7 billion authorized and appropriated for the CVN 72/CVN 73 program has been contractually obligated as of March 1983. These contractual commitments and liabilities involve hundreds of companies across the nation.

As it does with any shipbuilding contract, the Navy entered into the CVN 72/CVN 73 contract with the aim of obtaining these ships at or below the contract target price and on or ahead of the contract delivery schedule. The contract contains no special provisions for cancellation of either of the carriers. It does include the standard Defense Acquisition Regulation (DAR) provision providing for termination for convenience of the Government, if it is in the best interest of the Government to do so.

The cost to cancel one or both of these carriers is impossible to determine. As evidenced by the hundreds of contracts and subcontracts already awarded under the program, the ripple effect of cancellation in terms of material commitments, employment, capital investment and opportunity costs would be felt by companies in almost every state in the nation.

The impact and contigent liability from cancelling one or both of the CVN's under contract would be substantial. Compounding the problem of trying to estimate cancellation costs is the fact that the order of magnitude of all of these costs is directly related to the timing of the cancellation decision. Even if the decision was made now, the cost to terminate would run in the hundreds of millions of dollars and result in years of claim and counter-claim litigation, "poisoning the well" with regard to future business relationships between the Navy and an important shipyard and component vendors, as claims and counter-claims grind on endlessly through the courts for the next decade.

A summary of the most serious effects that cancellation would have falls into the following key areas:

Delay in achieving the national commitment to a 15-carrier battle group Navy.—Loss of early delivery of remaining CVN. Excellent progress on *Theodore Roosevelt* (CVN 71) will be negated by the expected strech-out of CVN 71 work due to cancellation of the two additional carriers, leading to a 12 to 14 month delay of CVN 71 delivery and loss of projected savings due to that early delivery.

Permanent loss of substantial multiship construction dollar savings.—In addition to the cost impact suggested above, cancellation of the two fiscal year 1983 CVN's would eliminate the $750 million savings associated with the series construction plan approved by Congress, negating: improved planning and use of NNS manpower and facilities; reduced non-recurring engineering, planning and grouping costs; economies of scale in material procurements; reduced production gaps and improved productivity achieved through construction continuity; reduced escalation resulting from earlier delivery.

Potential higher costs of other Navy work.—Cancellation of the two CVNs would potentially place substantial additional financial burden on remaining work at Newport News Shipbuilding other than CVNs.

Adverse impact on the marine industrial base nationwide and on Navy/Industry relationships.—Cancellation would have a catastrophic effect on Navy business relations with its largest, most diversified shipbuilder and with major vendors. Just as important, cancellation would be taken by the business community at-large and the shipbuilding industry, in particular, as a lack of resolve by the Government in achieving a 600 ship Navy and in fostering the stability necessary for efficient program execution. This also would result in a serious deterioration of the ship construction and repair industrial base and seriously impact economic recovery in currently depressed industries. The impact on contigent liabilities would be substantial.

The Navy needs these aircraft carriers to regain and maintain maritime superiority. The requirement has not changed; it has not diminished. If anything, the need has increased in view of our understanding today of the threat to our nation's security. The Navy did not award the construction contract for CVN 72 and CVN 73 in anticipation of cancelling the contract at some future time. On the contrary, all

planning for the award was predicated upon executing the program as expeditiously and as businesslike as possible. As a result, the program is well ahead of where it would have been had it been executed on a more traditional basis. This has compounded the complexity and the multiplicity of factors what would eventually dictate the total cost resulting from a cancellation. Total cost would have to include not only the direct cost of the cancelled ship plus the increased cost of the remaining one, but also the other costs associated with the adverse impact on employment, the deterioration of the Government-private sector business relationships, the years of litigation that potentially would ensue, and certainly the significant step backward cancellation would mean to the Navy's overall shipbuilding program. While it is impractical to estimate all of these costs, it is reasonable to suggest that the total impact would approach the contract cost of the second of the two carriers in this unique two CVN contract.

Senator BINGAMAN. There may not be the votes to get it done, but I think it would be nice to know if we still have the option. If we are signing contracts that cost us more to get out of than it does to go ahead and perform, I think we have a major problem with the contract.

Mr. DELAUER. There is one comment that is germane. The cost of canceling those contracts would cost you more for termination liabilities than we have programed for spending on them in the next 2 years. I don't know if that is what you want to do.

Mr. THAYER. It may be that for this year, in terms of outlays, cancellation charges could cost you more.

Senator BINGAMAN. He was not comparing outlays. He was talking about the cost of buying the carriers versus the cost of canceling the contract. Because I asked him the question twice, and he was very specific on it.

I would appreciate you checking that out. I think we ought to know if that is the situation we are in and how we got there.

Mr. DELAUER. If I were the contractor, I would urge canceling the contract.

Senator BINGAMAN. That is right, as soon as they signed the contract.

Thank you, Mr. Chairman.

Chairman ROTH. Senator Sasser.

Senator SASSER. Thank you, Mr. Chairman.

It sounds to me as if the Navy Department is using the same acquisition techniques we used in getting the Clinch River breeder reactor in building these carriers. We were told it would cost more to cancel the breeder reactor than it would to build it.

Mr. Secretary, I think you can see that we are very concerned here this morning about the Department of Defense and the means and ways by which you go about acquiring weapons, and the acquisition process, and the costing out, and well we might be, because this administration is proposing, as you know, spending $1.6 trillion over the next 5 years in the Department of Defense, principally for weapons acquisition.

This figures out to something like $20,000 per household in this country over the next 5-year period. We are told that we need to spend 25 percent more on defense than the previous administration indicated we should. They were going up in defense spending at the rate of about 3 percent a year, as I understand it.

I am told about 80 percent of all the purchases by Government over the next 5 years, of private sector goods, will be made by the Department of Defense, when we read in the newspapers of leaks

coming out of the Department of Defense indicating that even this $1.6 trillion budget may have been underestimated by as much as $750 million.

I listened to Mr. Spinney's testimony before the Budget Committee just a few weeks ago, and no one can say that Mr. Spinney is not a strong advocate of increased defense spending. No one can say that he is not in favor of increasing our military capabilities substantially.

But I thought the thrust of his testimony and what I am reading and hearing is that we are continuing to substantially underestimate the costs of this defense buildup which is the largest, I believe, since World War II.

Mr. Secretary, I am encouraged that you are exhibiting some substantial concern about this yourself. I am encouraged that it appears to me you are attempting to institute some procedures that will be helpful in the long run.

But my question to you is this: Do we have any procedures for disciplining Pentagon officials or employees who consistently and intentionally underestimate weapons systems or try to put the Congress on what we call a low-ball estimate in an effort to get us committed, to get us down the line to the point—we are confronted with testimony like the Senator from New Mexico was confronted with, wherein the Secretary of the Navy says: "Well, it will cost more to cancel those nuclear carriers than it will take to build them."

What are we doing about these employees that put us on these so-called low-ball estimates?

Mr. THAYER. I think we are doing quite a lot, Senator. I don't want to get into a discussion of the SAR's again, but if you can take 90 percent of what was released yesterday about the difference between last year and this year, then that does say we are doing a better job of estimating. And we can do better yet. We are going in very heavy for independent cost estimates. As I mentioned earlier, we are going through the process now. After the services have been given the defense guidance and the defense fiscal guidance for fiscal 1985, they then put together their program objective memoranda, which will come into OSD in May.

We will begin to put together the total picture at that point, leading up to the Defense Resources Board series of meetings over a 2 week period where we review all of the significant programs in the Department of Defense. It is very likely that we are going to find that with realistic budgeting and realistic projections of the budget, we are going to have to make some hard decisions.

As I said earlier, my strong feeling is that we will not do that except in very rare cases by extending programs for the benefit of a marginal program or for the benefit of staying within the budget. We will be taking some very big steps.

I think that feeling is across the board in the Department of Defense.

I haven't detected anyone holding out for the old way of doing business.

Senator SASSER. Well, that is encouraging.

Mr. Secretary, the House Budget Committee has passed a budget which may or may not be accepted but which indicates a 5-percent real growth in defense spending.

I serve on the Senate Budget Committee. Judging from the general discussion among my colleagues on the Senate Budget Committee, it appears to me that there is going to be a bipartisan effort there, bipartisan consensus, that we should not increase defense spending on the Senate Budget Committee by any more than 5 percent.

Now, if there is a commonality between the Senate and House Budget Committees, and you do get only a 5-percent increase in defense spending as opposed to the larger increase that the administration is requesting, where are you going to cut?

Mr. THAYER. It is really a little early to tell, Senator, but I think that if we are forced into that position, we are going to have to cut hardware as opposed to cutting back on readiness and areas that have been neglected. We cannot afford to cut areas that traditionally have been skeletonized at times when the budget cutting becomes necessary and, consequently, have to pay the price later on down the road because of stretch outs and inadequate support.

Senator SASSER. Mr. Secretary, I am very encouraged to hear you say that if there is a pull back from the administration's proposed budget for defense spending, that you are not going to take that out of the field of readiness. That has been a concern of mine in the years that I have been familiar with this problem in the Senate and I think the concern of many others of us on Capitol Hill that we are trying to cut back in the field of readiness.

I think that would be a big mistake, and I am delighted to hear you say that you don't intend to do that.

Mr. THAYER. Let me clarify what I mean when I say we are not going to weaken readiness as it has traditionally been done in the past, and at the expense of continuing along the same road with the hardware and the quantities involved.

If the cut is severe enough, readiness is going to have to take its lumps along with everything else, but what I am saying is that it is not going to be second priority.

Senator SASSER. Good. My time has expired, Mr. Chairman.

Thank you.

Chairman ROTH. Thank you, Senator Sasser.

Senator Levin.

Senator LEVIN. Thank you, Mr. Chairman.

I commend you on your scheduling of these hearings. This is an important effort, and I am glad to be able to participate in them in some way.

Mr. Secretary, first of all, just to put this one point to rest. In your statement you claim these savings in weapon systems acquisition and apparently this morning, you acknowledge that $11 or $12 billion of those net savings comes from an accounting change on the Tridents; is that accurate as a summation?

Mr. THAYER. No, Senator, we didn't claim savings. All we are doing is adding up the formula in the SAR. We are saying that the cost changes as compared with last year, for various reasons, are not being put in the savings category or cost avoidance category.

Senator LEVIN. You claim some successes in controlling the growth of cost. Is that right, and $11 billion of the $18 billion saved is an accounting change; is that correct, for the Trident?

Mr. THAYER. Yes.

Senator LEVIN. Whether you call them savings or controlling cost growths, you do use a figure here, a net decrease in the SAR program of $18 billion, and just to put this to rest, I gather $11 billion of the $18 billion results from the accounting change on Trident.

Mr. THAYER. That is correct.

Senator LEVIN. In your statement, you start by telling——

Mr. THAYER. Also, I might say, Senator, just to put all this in perspective, about $13 billion is the result of taking advantage of a reduction in inflation. So if you add all of this up and you take out these things that we have been criticized for, which are debatable—because we certainly were criticizied for adding them last year—but the explanation was not provided as to what made up for the cost growth last year of $114 billion.

So, if you take out the Trident and also the inflation, you are left with a plus $7.5 billion or thereabouts compared with $114 billion.

That is what we are saying then, that it is a very indicative number, even though it is based on different ground rules than the preceding years. It says that for the first time since 1975, it is as low as any year in total dollars and is lower in percentage than any SAR comparison since 1973.

Senator LEVIN. Thank you, Mr. Secretary.

You stated on page 2 of your statement that U.S. forces are outnumbered 2 to 1 in military personnel.

Does that include our allies?

Mr. THAYER. If we are just talking about our forces versus their forces, it is considerably more.

Senator LEVIN. Does that include our allies?

Mr. THAYER. Yes; it says that U.S. forces are outnumbered 2 to 1.

Senator LEVIN. Are you including our allies in that figure?

Mr. THAYER. No.

Senator LEVIN. Isn't that kind of misleading?

Mr. THAYER. I don't think so. I don't think the Russian forces include the Warsaw Pact nations.

Senator LEVIN. If we go to war in Europe, would we be fighting alone?

Mr. THAYER. No; we wouldn't expect to, but neither would they.

Senator LEVIN. Well, adding Warsaw Pact to their forces and NATO forces to ours, what is the ratio?

Mr. THAYER. I don't know.

Senator LEVIN. Well, it is a lot more than that, but that impression is a very misleading statement.

Let me quote your statement: "Because U.S. forces are outnumbered 2 to 1 in military personnel and by greater ratios in most categories of military hardware, most categories in military hardware * * *." How many categories in military hardware are there?

Mr. THAYER. There are many.

Senator LEVIN. How many?

Mr. THAYER. Tanks, aircraft, ships.

Senator LEVIN. Can you give us the total number of categories? I mean, you have made a statement here very similar to one the

President made, by the way, a few months ago, you made a statement that we are outnumbered by more than 2 to 1 in most categories of military hardware.

You made the statement. I challenge that statement. But since you made it, I would like to know how many categories of military hardware are there?

Mr. THAYER. In the book that we put out, "Soviet Military Power," I think it covers that question very completely.

Senator LEVIN. How many categories of military hardware are there, is the question I have asked of you.

I have asked this question of the Defense Department for the last 3 months, and, Mr. Chairman, I think this is a critical issue. I know it doesn't directly involve procurement, but what these kinds of statements are used for is to defend, No. 1, the increase in the budget and, No. 2, procurement practices.

Now, a few months ago, the President said that, "In virtually every measure of military power, the Soviet Union voices a decided advantage."

Now, he told the world that in November of 1982. I have been asking the Pentagon, "How many measures of military power are there?"

By the way, before I asked the Pentagon that question, I asked the Library of Congress that question and whether or not the President was right. The Library of Congress, an independent, objective body that we rely on, both sides of the aisle, said, "He is wrong."

Now, can you tell me how many measures of military power there are since the President said that the Soviet Union enjoys a decided advantage in almost every one, or can you tell me this morning how many categories of military hardware are there since you say this morning that they enjoy more than a 2 to 1 advantage?

Mr. THAYER. I would have to go through this book and count them up, Senator.

Senator LEVIN. But you obviously counted them before you made that statement.

Mr. THAYER. No; I haven't counted them. I have gone through this book. I think it clearly demonstrates our point in every category we talk about.

Senator LEVIN. That is not a comparison book. That is a book that shows us the Soviet military capability. That doesn't purport to be a balanced statement, does it, showing us against them in every category of military hardware?

Mr. THAYER. I think, in effect, it does just that.

Senator LEVIN. And you are saying that that book shows us all of the categories of military hardware; is that what you are saying?

Mr. THAYER. No; it doesn't show all of them.

Senator LEVIN. So, I cannot look to that book to answer my question. I am asking you that question again. You are using this statement to derive a procurement budget. You are saying, at the beginning of your statement, "First the competition is stiff. The Soviets have invested about 60 percent more than the United States in military equipment last year." Yet you don't include our allies.

I think that is misleading, but it is opinion as to whether that is misleading or not. I say it is misleading; you say it isn't.

But, then, you say "by even greater ratios" greater than 2 to 1, we are outnumbered in most categories of military hardware.

I am asking you a simple, straightforward question, just the way I asked the President when he made his exaggerated statement: How many categories of military hardware are there? You point to a book, and now you say the book doesn't give me the answer.

Are there 50, 100, 200?

Mr. THAYER. The book gives you the answer in the major categories of strategic and conventional systems.

Senator LEVIN. Mr. Secretary, your statement this morning relates to most categories of military hardware. I am simply asking you——

Mr. THAYER. Senator, I don't think you want me to go through them here and take everybody's time to add up the number of categories of hardware.

If you would like, I will supply you a detailed memorandum which says what I consider to be categories of military hardware.

Senator LEVIN. I would have thought that before you reached the conclusion that by even greater ratios we are outnumbered in most categories of military hardware, that you would have done the addition, and certainly long before you made the statement.

Mr. THAYER. I don't think the total of the number of categories has an awful lot to do with it.

Senator LEVIN. How can you reach the conclusion that in most categories they outnumber us unless you add them up?

Mr. DELAUER. You don't have to add them up. Most is most.

Senator LEVIN. I would appreciate that, Mr. Secretary. I would appreciate that document where you define most categories of military hardware, and I would appreciate from the Pentagon something that I asked for a long time ago, which is: How many measures of military power are there since the President of the United States says that in virtually every one of them, the Soviet Union enjoys a decided advantage?

[The information referred to follows:]

CATEGORIES OF WEAPONS

There are five categories of weapon systems: strategic nuclear, nonstrategic nuclear, conventional, chemical and biological. Strategic weapons are defined as those nuclear weapons having an intercontinental capability (5,500 km). U.S. strategic offensive forces consist of a Triad of land-based intercontinental ballistic missiles (ICBM's), submarine-launched ballistic missiles (SLBM's) and intercontinental manned bombers. Since 1974, Soviet Union ICBM production as outstripped the United States by a ratio of 6:1. Soviet SLBM production exceeds that of the United States by 16:1, although the inventory of U.S. SLBM reentry vehicles is nearly triple that of the Soviet Union. Soviet interest in the manned bomber is evidenced by the number of ongoing programs to upgrade their force. Production rates of the Backfire strategic bombers continue at approximately 30 each year with the new Blackjack now undergoing flight tests. At the same time, the United States has produced no strategic bombers, except for the planned B–1B, which has an initial operating capability scheduled for 1986.

Nonstrategic nuclear (NSNF) weapons are those nuclear weapons with less than an intercontinental capability. NSNF weapons consist of missiles, rockets, artillery, and nuclear-capable aircraft with less than an intercontinental capability. The Soviets hold a decided advantage in the longer-range intermediate-range nuclear forces (LRINF) missile category having recently deployed 351 mobile SS–20 missiles in ad-

dition to older SS-44 and SS-5 missiles. The United States does not now have a comparable missile. The scheduled deployment of 464 ground launched cruise missiles and 108 Pershing II missiles to western Europe will improve NATO LRINF capabilities. The numerical balance, however, will continue to favor the Soviet Union.

Conventional weapons are those nonnuclear weapons excluding biological and chemical weapons. While the categories of conventional weapons are too numerous to list here, the following systems are considered to be the major categories of conventional weapons. Tanks, artillery tubes, antitank weapons, principal surface combatants, attack submarines, aircraft, surface-to-air missiles (SAM's), and helicopters. Generally speaking the Soviets hold wide production advantages. For example, from 1974 to 1982, the Soviet tank production rate was approximately 3:1 over the United States; artillery and rocket launcher production 14:1; attack submarines 2:1; tactical combat aircraft 2:1; and SAM's 8:1. United States and Soviet production of principal surface combatants over the same period was roughly equal.

In the area of chemical warfare Soviet forces are the world's best equipped, and are capable of both offensive and defensive operations in toxic environments. There are strong indications that the Soviets have a biological warfare capability. Soviet use of toxins in Afghanistan and Southeast Asia has been confirmed. The United States does not have a biological or toxin warfare capability, does not intend to develop one, and has stated that we have no plans to use such a warfare capability.

Measures of Military Power

The assessment of military power is a complex process, involving quantitative analyses as well as qualitative judgments concerning such intangible and unquantifiable factors as leadership, training, and morale. Static measurements provide useful comparisons of capabilities, but cannot reflect the interaction of forces in war. Whenever possible, static force comparisons should be complemented by dynamic analyses that attempt to incorporate some of the complexities and variables of actual combat. The measures of military power should include resources (military investment, operating costs, and available manpower), forces in being (active and reserve force structure and readiness), weapons and equipment (modernization), logistics (substainability), technology, and leadership. To each of these measures we must apply both quantitative and qualitative measures to evaluate the strengths and weaknesses of U.S. and allied forces in three major categories—strategic nuclear, nonstrategic nuclear, and conventional.

Since 1971, the U.S.S.R. has outspent the United States in virtually every category of military investment and operating costs. For example, its expenditures for strategic offensive forces were nearly double those of the United States, and the Soviets spent 50 percent more than the United States for general purpose forces. This Soviet commitment to improving the full spectrum of its military capabilities, combined with U.S. and allied failure to keep pace, has helped to negate many qualitative advantages previously held by the West. In terms of manpower, while the total population of all NATO countries exceeds the Warsaw Pact countries, WP forces in being (active and reserves) exceed NATO forces.

For more than two dacades the Soviet Union has pursued the steady expansion and modernization of its military forces. In addition, the Soviets have strengthened other Warsaw Pact forces and equipped Soviet clients and surrogates outside Europe as well. The failure of the United States and its allies to keep pace has resulted in a growing inbalance in strategic and general purpose force capabilities. This modernization has applied to weapons, equipment and logistic capabilities.

Although the United States continues to lead the Soviets in most basic technologies, such as the militarily critical area of electronics, this lead is now not nearly so apparent with the modern, highly capable weapons systems fielded by the Soviet Union in recent years. The number and quality of new ground, naval and aerospace weapon systems developed by the Soviets are impressive by any standard.

In the area of leadership, qualitative factors such as battlefield military judgment, timely decisionmaking, training, doctrine and morale are significant for assessment. While balance assessment and comparisons of resources and costs are important to the equation, there is a fundamental recognition that superior resources have not always determined success on the battlefield. The impact of command and control, different organizational concepts and doctrine and decisionmaking on both sides must be included. On the one hand the Warsaw Pact's concern with control and secrecy degrades efficiency, inhibits lower units initiative and leads to internal distrust. On the other hand the authoritarian system allows Pact nations to carry out military programs quickly and effectively. The United States and our allies appear

to hold a slight advantage of leadership over Soviet and other Warsaw Pact military forces.

Senator LEVIN. Last question, my time is up.

Mr. Secretary, you have said that one of your initiatives, or one of the Carlucci Initiatives, is to budget to most likely costs.

We recently heard from Mr. Spinney on that issue. He came over to a joint meeting of the Armed Services Committee and the Budget Committee and made a statement that we are still not doing it.

I know that there is a dispute on that issue as to whether we are doing it or whether his statement was correct.

My question doesn't relate to that. It does relate to an article in Time magazine of March 7, which says that because of his testimony, Mr. Spinney had been taken off broad program analysis and assigned to study nitpicking details.

Have Mr. Spinney's duties been changed in the last month?

Mr. THAYER. Mr. Chu is here, I will let him answer that.

Mr. CHU. No, sir, his duties have not been changed in the last month. He is assigned to the same section since he came to the Pentagon or to the Office of the Secretary of Defense, in 1977.

Senator COHEN. Does he still have his parking space?

Mr. CHU. I don't know whether Mr. Spinny has a parking space or not. Maybe he carpools or takes a bus.

Senator LEVIN. So there has been no change in his work or duties?

Mr. CHU. The particular focus of any staff member's responsibility changes and evolves over time through different projects. Over time, as you know, in the last administration, was a complement of the work Mr. Spinny did on a project called "Facts of Life". Then he went on to a subject of the Senate Armed Services Committee on testimony. He will obviously work on other projects over time.

Senator LEVIN. When was the last change in his project?

Mr. CHU. If I recall correctly, late last year sometime.

Senator LEVIN. So there has been no change in the last year since then?

Mr. CHU. Not that I am aware of.

Senator LEVIN. Would you be aware if there were a change?

Mr. CHU. I try to check the record. I do not check with everyone of the 80 staff members every morning, sir.

Senator LEVIN. I do not think that Mr. Spinney is every staff member—or that he can be identified that way. Dr. Chu, if there had been a change in his duties, would you know about it.

Mr. CHU. There has been no change in his duties since late last year.

Senator LEVIN. Thank you.

Senator COHEN [presiding]. Gentlemen, we are going to have to move on to get to the other witnesses because we have a vote on, but I would like to make a couple of points. With respect to the question from Senator Bingaman about the two aircraft carrier cancellations, we did have testimony this week in the Armed Services Sea Power Subcommittee that that would involve several billion dollars in canceling. They are projecting to save some $780 billion by procuring both at the same time. To the extent that you would have canceled them, you would have to incur the cancella-

tion cost. You would also have a good deal of litigation in terms of what those costs would involve, and you would increase the costs of work being done on other ships that that yard is working on. So there are costs involved, and I am sure that information will be made available to Senator Bingaman on that.

Second, there is the issue of our looking at the $1.6 trillion defense budget. That is important. I think you also have to place that in the context of the total 5-year budget, which is about a $5 trillion budget. So out of that $5 trillion, we are looking at $1.4 trillion for defense. Historically, that does not seem out of proportion. If you go back to the Kennedy years, for example, 48 percent of the budget was spent on defense. I am less concerned with how much we spend, but rather, how we are spending it. How are we spending that money, and what are we getting for it?

I do not know of too many people who are looking at the nature of the threat which confronts us. That really ought to be the thrust. I do not think the world is a safer place than it was 20 years ago. I think it is a more dangerous place. I do not think we ought to minimize the nature of the kind of dangers that we face.

Second, with respect to what Senator Levin was getting at, I do not think it is entirely appropriate to look at the relative services—the U.S. force level versus the Soviet Union. If you go to war, we will have NATO forces fighting together with the United States as the Soviets will have the Warsaw Pact nations.

If you go to the war in the Persian Gulf, which President Carter committed us to doing in the event of an interruption of our oil supplyline, I doubt very much whether a NATO country is going to be there. They have specifically declared that their area of responsibility is not beyond the NATO confines. We may very well be there alone without the assistance of the British or certainly the Germans or the Italians or the others. I am not sure that it really helps to say that we are not including them in each specific situation.

Finally, just let me say that I think, once again, that it is a mistake to try and simply total up what we did in the past years and go forward from there. I do not know what the Budget Committee is going to do. Senator Sasser, I think, is probably correct in his assessment as to what the majority of the Budget Committee members are going to vote for.

One of the problems I tried to articulate earlier is the difficulty we are having in Congress when we don't have sufficient information to understand how DOD is doing business. There is a temptation to go back and say, we do not want to deal with the specifics. We are just going to cut it. We are going to cut it 5 percent on what the President wants and you deal with the problem, and we do not care what you do with it when you cut. Readiness, do not cut it. By the way, do not cut the submarine, that is 18 percent of the budget. We want to make cuts with a meat ax and not say how you should do it. That is brought about because people have lost confidence in what we are doing. They know there is waste out there. I know there is waste out there. I can talk about the Tomahawk cruise missile, and that is way over budget.

What is the reason? Is it mismanagement? I cannot go back and tell my constituents, the Defense Department mismanaged that

program and it is going to cost you $200 million over what they estimated. I cannot do that because I am saying those are estimates. Who wants to deal with costs? Should the taxpayers bear the cost of mismanagement? I do not think so. I think the contractor ought to bear it to the extent that there is a mismanagement.

I think we have got to try to come to some recognition of what we are after here. We are trying to make an accurate assessment of the nature of the threat that confronts us and size the defense to fit that. I am not talking about 5 or 2 or 1 precent. That is not the problem. The question is, What is the nature of the threat? What do we have to do to confront the threat and neutralize it?

I will declare a recess until Senator Roth returns from the vote. At that point we will proceed with the next witness, whom I believe will be Walt Sheley from the GAO.

Mr. THAYER. Thank you, Senator.

Mr. DELAUER. Thank you.

[Mr. Thayer's prepared statement and responses to written questions submitted by Senators Roth and Levin follow:]

DEPARTMENT OF DEFENSE

STATEMENT

OF

PAUL THAYER

BEFORE

SENATE GOVERNMENTAL AFFAIRS COMMITTEE

23 March 1983

DEPUTY SECRETARY OF DEFENSE

Mr. Chairman and Members of the Committee, this is an opportune time for me to testify concerning management in the Department of Defense. I am about half way through my third month in office as the Deputy Secretary of Defense; and much of that time I have spent assessing DoD's management structure and weapons acquisition process. Today I want to discuss with you some of my findings, in the context of the four topics you have asked me to address: Selecting Weapons Systems, Estimating Weapon System Costs, Negotiating Better Acquisitions, and Reducing Fraud, Waste, and Abuse.

Overall, I judge DoD to be in fairly good organizational health. I make that diagnosis fully aware of the problems that have been highlighted in the press recently. Years of management experience in private industry have taught me never to generalize about an organization based on a few highly publicized problems. That is particularly true in the case of an organization like DoD that has 13 million contractual transactions each year. Instead of dwelling on historical problems, as some critics seem so anxious to do, I believe in focusing on what we can do about those problems with current management procedures, and what we have to change to solve some of the problems in the future. I also know you have to do this by relying on the quality and accomplishments of the people in place. In both cases -- management procedures and people -- I find the Defense Department to be in fine shape.

I do not mean to imply that I believe our problems should be minimized or left uncorrected; nor should failures be ignored and allowed to drain an organization of resources needed for healthy and productive programs. I have always believed that Darwin's principles applied as much to business as to biology. There is no reason that survival of the fittest should not also apply to Defense programs.

The Defense Department has indeed eliminated or restructured programs that have not proven cost effective -- a total of 120 programs during the past two years. For the most part they were relatively small. But the decision to cut or restructure programs is usually difficult, often complicated by economic and political factors. In coming months I can assure you that we will become more demanding that these hard decisions be made.

During my assessment of the weapons acquisition process, I have naturally compared my findings to my former experience in private industry. I have been struck by the similarity of the challenges faced by the manager in the Defense Department as compared to his counterpart in the private marketplace. The development and production of weapon systems is a risky business, in some cases riskier than commercial enterprises.

First, the competition is stiff. The Soviets have invested about 60% more than the United States in military equipment last year and roughly $500 billion more over the past decade. Because U.S. forces are outnumbered two to one in military personnel and by even greater ratios in most categories of military hardware, the United States has had to turn to technology to provide the

means to offset Soviet quantitative superiority. That, in turn, presents a particular challenge to the DoD manager. While he is developing a weapon to defend against a Soviet capability, the Soviets are seeking a means of neutralizing the new weapon -- heavier armor on the front of a tank to counter a new anti-tank weapon or electronic countermeasures to jam the radar in our high performance fighters. So if we are to have weapons that are not obsolete before they are put in the hands of our troops, we must be willing to take some technical risks and accept a certain amount of concurrency. Even though we have more failures in the development program we will end up paying less because we reach operational capability in a shorter time. Of course this assumes that we commit the time and money it takes to do well the task of production planning and support.

In response to the third topic you asked me to discuss -- Negotiating Better Acquisitions -- I will review some of the measures currently being taken to control those costs. But first I will address your initial topic.

Selecting Weapon Systems

Requirements for new systems may arise in any one of three ways: (1) intelligence identifies a threat for which we have no appropriate defense; (2) our military forces identify an operational deficiency; (3) new objectives or changes to our strategy require new hardware. Based on those requirements and an analysis of technological opportunities, the Services then develop mission need statements and performance requirements. While the procedures and documents for defining requirements differ from Service to

Service, every system considered for the defense program has a firm strategic foundation and is meant to counter specific threats.

In many cases, new systems have to be developed when it is found that existing systems cannot be sufficiently improved through evolutionary enhancements to meet the requirement. Since requirements almost always outstrip available resources, only the highest priority requirements are included in the Services' programs. Even then they are subject to adjustments by both the President and the Congress during the development of the budget.

When funding is appropriated for a new weapon system, the acquisition process begins. The Defense Department solicits all potential sources -- in-house laboratories, educational and other non-profit institutions, and the private sector -- for ideas. Proposals are evaluated against a set of technical criteria that were included in the solicitation. In addition to the technical proposal, a typical solicitation also requires cost, management, and sometimes fabrication proposals from competing contractors. There has been recent emphasis to insure that other factors, such as a contractor's past performance, are included in the source selection.

Weapon system developments generally are divided into four phases with separate contracts for each phase -- concept selection, demonstration and validation, full scale development, and production and deployment. For major weapon systems, the Secretary or Deputy Secretary of Defense decides, after considering the recommendations of the Defense Systems Acquisition Review Council

(DSARC), whether to move to the next phase. The council defines key performance parameters and tests to determine when a system can proceed into the next phase. If a weapon system concept is chosen that has already progressed through the early stages of development, it is possible to move it directly into production while further development continues assuming the production planning has been largely accomplished.

While there is an orderly process and definite procedures to deal with the selection of new weapon systems, uncertainties regarding future threats and missions will always exist. Other destabilizing influences can be reduced by good management. This requires the discipline to start only that which we can afford to see through to production and to resist the temptation to reexamine and redirect the development and production program in each budget year. I intend to see that the Pentagon maintains that discipline.

Estimating and Contracting Costs

The Department has had some successes recently in controlling the growth of costs. In the 31 December Selected Acquisition Reports (SAR) submitted last week to the Congress, there is reported a net decrease in 53 SAR programs of $18.4 billion. The first time in 10 years so we must be doing something right. While these favorable results are largely attributable to the lower defense commodity inflation index resulting from the Administration anti-inflation program, the remaining cost growth is still much lower than it has been in recent years.

Of course, as you note in the second topic you asked me to

address -- Estimating Weapon System Costs -- the difficult task of estimating weapon system costs realistically is a major cause of cost growth. To address that problem, the Pentagon some years ago established a Cost Analysis Improvement Group (CAIG) to prepare independent estimates of the full life-cycle costs of a system. Since the current Secretary has made "budgeting to most likely costs" one of his central acquisition initiatives, the CAIG has been quite busy during the past two years.

In deriving independent estimates, the CAIG relies on many sources of data: the cost and development history of the program to date, provisions of contracts that have already been signed, and the cost history of similar programs. In fact, the CAIG maintains a special data base, derived from cost information on systems actually being procured, that is used to project the costs of new weapons.

Contrary to some recent testimony, no single, simple equation can produce cost estimates for all situations. The construction of an independent cost estimate is a painstaking process that combines a variety of analytic approaches. Some elements are constructed using parametric techniques -- that is, the estimated cost is based on the charateristics of the weapon system or its components relative to those of existing systems. This approach is particularly helpful in the early stages of a program, before actual production begins.

Once development and early production data are available, they are analyzed to help project future production costs. Those projections must include the engineering hours and material

costs that will be incurred when the system enters full production. The analyses must also consider the adequacy of projected requirements and costs for initial spares, support equipment, and anticipated modifications to the weapon system. In all cases, the effect of new production processes on costs and for the expected savings from increased labor productivity once a system has entered regular production are considered. In reviewing recent independent cost estimates, I noted that the CAIG was responsible for raising cost estimates in several major programs -- the F-15, F-16, F-18, LAMPS, MARK III and AMRAAM.

In addition to preparing independent cost estimates for weapon systems, our cost staff also supports our resource planning by providing estimated costs of alternative programs -- that is, alternative mixes of forces and weapons. These alternatives are considered each summer by the Defense Resources Board in formulating its recommendations to the Secretary and the Deputy Secretary regarding the next year's budget and the five-year defense plan.

And finally, the cost staff has been used to support the implementation of the acquisition initiatives. By examining the cost effects of producing major weapons at different production rates, it has shown the best way to achieve greater program stability and more efficient production.

The bottom line, which is borne out by the December SARs, is that the increased emphasis on applying independent cost analysis has been instrumental in improving the quality of our defense budgets.

Negotiating Better Acquisitions

In responding to the third topic you asked that I address -- Negotiating Better Acquisitions -- I will be giving you an update on the progress report that Frank Carlucci provided you last year. Considering the new budget, the Defense Department estimates that the 32 acquisition initiatives and other improvements to management and operations will produce about $30 billion in savings by the end of FY-88. In addition they offer us a means of shortening the acquisition cycle, increasing readiness, and strengthening the defense industrial base.

It was a courageous decision to tackle such a broad spectrum of initiatives. The easier way would have been to develop and implement the initiatives a few at a time. But that would have been a piecemeal approach that would not have overcome quickly the many pressing problems faced by the Defense Department and would not have resulted in the economies and efficiencies that have already been realized.

My intention now is to narrow the focus of the thirty-two initiatives. Some have been fully implemented, others have become an integral part of the way DoD does business and are working well. They do not need my attention -- or interference. Because a few others proved infeasible or offered only minimal returns, we are no longer going to spend time on them. That leaves five or six major initiatives remaining that promise additional savings in the future on which I plan to focus my attention. In addition I will be studying several new areas for future emphasis, to include administrative improvements,

controlling costs, scheduling and technical changes, and inventory control.

The seven acquisition initiatives that dealt with the DoD decision-making process have been fully accomplished. A Council on Integrity and Management chaired by the Deputy Secretary with the three Service Under Secretaries represented, has been established to monitor the implementation of the management reforms. To satisfy another initiative, the Service Secretaries are now formal members of the DSARC, a move that promotes participatory management and more coordinated decisions. Paperwork has been cut roughly in half, with coordination and oversight maintained through regular channels of communication. The number of programs which we review in depth has been reduced and there are fewer formal DSARC milestones. When things are going smoothly on a program, decisions are frequently delegated to the Services. Through regular Secretary's Performance Reviews, we have a means to keep abreast of progress and closely scrutinize programs when there are signs of trouble. During the past year there were about twenty performance reviews. Perhaps most significantly, the Pentagon's two major systems affecting the acquisition of weapons -- the DSARC process and the planning, programming, and budgeting system (PPBS) have been more closely integrated.

Initiatives on Which I Will Focus

One of the most successful initiatives -- producing savings of $4.5B in 27 programs -- is multiyear procurement. It will continue as a major initiative because it offers a number of advantages. Because it provides the opportunity to make large

lot purchases to avoid line stoppages at subcontractors and eliminate the need to renegotiate contracts annually, it offers DoD significant economies. For our defense industries it offers much needed stability and provides incentives to make capital improvements. Of course we will need Congress' continued support to realize these savings and advantages.

Another initiative that will continue to receive my wholehearted attention is the enhancing of competition. Since DoD is most interested in alternative ideas and alternative design approaches to our military needs, competition is vital in the early stages of our programs. Even after a single development prime contractor is chosen, significant competition still takes place at the subsystem and vendor levels. To increase competition during the production phase of programs, the Defense Department is now placing special emphasis on second sourcing where it is feasible and economical. From beginning to end, from initial design studies and proposals through prototyping, full scale development, production and support, I intend to continue encouraging competition because we know it provides cost benefits in most cases.

Another area that will receive my close attention is the provision of adequate readiness and support for our procurement programs. The desire to reduce cost and acquisition time of new equipment must be balanced by a concern for designing and funding for future readiness and support for that equipment. Ignoring factors such as the provision of spare parts, as has sometimes been done in the past, is unwise false economy. Six

acquisition initiatives address our readiness and support for new equipment. I intend to consolidate them into a single initiative and improve the capability to estimate future logistic resource requirements and costs.

Perhaps one of the most critical initiatives, one that I intend to support strenuously, is the maintenance of economic production rates. It makes sense to program equipment at rates that make the most efficient use of a manufacturer's capabilities. But when fiscal pressures become too great, business sense is sometimes offset by political expediency. To "save" problem programs too many programs are stretched out at uneconomical rates. In the FY83 budget, the Defense Department increased the production rate on 18 programs to obtain projected savings of $2.3B.

Frankly, reductions in the Defense Department's top-line funding have imperiled efforts to achieve program stability and economic production rates. Congress' action on DoD's FY83 budget request was a setback to the management improvement process.

To avoid future disruptions to efficient and economical production, I intend to firmly defend the budget we have submitted. I also will carefully scrutinize new starts to assure that they can be accommodated without interfering with on-going programs. And I will be taking steps to isolate those programs of lower priority that must be stopped if the budget does not satisfy all our needs. This is a difficult role that requires the cooperation of all within the Defense Department and from Congress itself.

In sum, then, I intend to emphasize the following six

21-162 O—83——5

initiatives: realistic budgeting, implementing multiyear contracting, achieving more effective competition, improving readiness and support, increasing program stability, and achieving more economical production rates. Stressing these key initiatives will ensure better initial estimates of weapon costs and a sound acquisition strategy embodying the proper selection of techniques to fit each program. If those initiatives are to produce the efficiencies and economies we seek, hard decisions will have to be made by DoD and the Congress. The Defense Department must scrutinize closely all new starts and, on a selected basis, eliminate marginal weapon systems when required to provide funds for higher priority programs. It cannot continue to get the necessary funds by stretching programs. Congress needs to support DoD's efforts to assure program stability, in particular by providing the funding for the multiyear efforts and production rates that have been requested.

Reducing Waste, Fraud and Abuse

I understand that all the best management procedures in the world will only work if somebody is checking to insure they are being followed. In responding to the final topic you asked me to address -- Reducing Waste, Fraud, and Abuse -- I want to assure you that the Defense Department's auditors and investigators are actively and aggressively employed.

Secretary Weinberger created the Office of Review and Oversight shortly after arriving at the Pentagon. Through this office, he has made it well known that the elimination of fraud, waste, and abuse and the promotion of effectiveness, efficiency and

economy in DoD program operations require priority attention. This action has been reinforced and strengthened by the action to establish the DoD Office of the Inspector General in accordance with the IG Act of 1978 as amended this past fall. In addition, we have over 3,000 central auditors in the Defense Contract Audit Agency under the Comptroller who will be more aggressively reviewing contract costs.

Secretary Weinberger's personal interest in the review and oversight effort has produced an encouraging degree of cooperation between managers and auditors. Where in the past recommendations of auditors often fell on deaf ears, today managers work with them to weigh advice jointly and set timetables for resolving problems that are uncovered. During fiscal year 1982 our internal auditors identified potential savings of $2.4 billion and contractor costs or prices were reduced by $7.1 billion more as a result of contract audit recommendations. In addition, DoD criminal investigations resulted in restitutions of about $1.9 million and recoveries of more than $4.4 million from investigations referred previously to the Justice Department.

In addition to managers, all DoD employees are participating in the campaign to strengthen the efficiency and integrity of the Defense Department. During FY-82, the DoD hotline received almost 4,900 calls -- which resulted in more than 2,500 allegations being referred for further inquiry, audit or investigation. Our quick and straightforward response has convinced our employees that we are following up on their calls and on our audits.

What has disturbed everyone in the Defense Department

-- managers as well as rank and file -- is that some critics have taken DoD's own findings and used them against the Department before it could take corrective action.

Besides auditing contracts more stringently, the Defense Department is also writing tougher contracts to close loopholes that led to abuses in the past. In October, Secretary Weinberger issued new cost principles that regulate all DoD contracts. They strictly prohibit two previous loopholes -- the payment to contractors of lobbying costs and the payment of legal fees when a contractor is found guilty of fraud. We are studying other areas where we can make our contracts tougher to forestall any opportunities for abuses in the future.

The reforms I have discussed today will never make the cost of rearming America cheap. But they will make it more efficient and they will ensure that the taxpayers' money is spent prudently. I intend to do my part to see that they are implemented.

Responses of Mr. Thayer to Written Questions Submitted by Senator Roth

INCREASED COMPETITION IN AWARDING CONTRACTS

In July 1982, a status report on DOD's aquisition reform initiatives suggested that there had not been much movement in increasing price competition. There has been, apparently, difficulty in identifying appropriate areas and candidate programs.

Question 1. Could you bring us up to date on DOD's efforts to introduce more price competition into the acquisition process?

Answer. The DOD policy is that all procurements shall be made on a competitive basis to the maximum practicable extent. Recently, the SecDef in his letter of 9 September 1982 further reinforced our initiative on competition and requested a commitment to increase competition by all personnel involved in the acquisition process. To enhance competition, the Services and the Defense Logisitics Agency have been directed to designate advocates for competition, ensure commanders understand their responsibility, establish goals for competition, place special emphasis on planning competition, and publicize significant achievements. We continue to emphasize the early planning of competition in our DSARC review process.

Question 2. Do problems still remain in identifying appropriate programs for increased use of competition? If so, please explain them to us.

Answer. The production phase has been the difficult phase to carry out competition and requires in-depth planning to set the stage for the introduction of competition. This is primarily being introduced by establishing a second source at the prime level or subcontractor level for subsystems and components. It has limited application and we need to carefully select our programs for its use. The initial investment to qualify a second source before you can introduce a head-to-head competition is sizable. Other factors must be considered such as design stability, sufficient quantity and economical production rate to support two manufacturers, the status of the technical data package and amount of technological transfer from the prime, and the "make or buy" mix of the prime when planning a dual effort. Because of the various factors to be considered, as well as the sizable initial investment to introduce a second sourcing, Dr. Richard D. DeLauer, Under Secretary of Defense for Research and Engineering, is personally reviewing plans for the second source of major systems acquisition.

Question 3. What are the reasons for such minimal use of price competition during the production phase and, in your opinion, how valid are these reasons?

Answer. Competition in the weapons acquisition process occurs at many levels of which the production control decision is only one example. Modernization of military hardware competes with operating and support costs for the resources on the total defense budget. The advancement of the technology base and maintenance of the mobilization base compete with system acquisitions for that portion of the budget which is allocated to modernization. At the inception of an acquisition program design concepts are competed to select the most promising approaches within our affordability constraints. Finally, we get to the production phase of an individual system acquisition program where it still competes with other production programs. Our prioritization, whether in R&D or in production, must be responsive to the military and political objectives of the nation. Uncertainty and changing priorities can have a significant destabilization effect on a program which may take ten years from design competition to production.

Recognizing this inherent instability, we are nevertheless emphasizing the development of an acquisition strategy from the inception of an acquisition program. The determination of whether or when to initiate price competition (as opposed to design competition) is influenced by the total quantity of end items to be acquired, the rate at which we can afford to buy them, and the incremental cost of the facilities necessary to put a second source into production. For example, if an end item is to be acquired from a sector in industry which is operating substantially below capacity and if the end item can be produced with existing facilities, the incremental cost of a second source may be quite small. Conversely, the cost can be substantial if new investment in expensive tooling, production machinery, and processes is required for the second source. In some cases, the potential savings from competition as well as alternative strategies (such as component breakout) have to be considered. Most importantly, once a particular strategy is selected, it cannot be changed easily without incurring penalties in the form of uneconomical production rates, schedule slips, sole sources of supply, and inefficiencies resulting from the use of obsolete production facilities and processes.

Competition is inherent in the acquisition process. We are committed to the use of competition to ensure fair and reasonable prices for our military hardware. However, we must also ensure that what we buy is responsive to our needs. To achieve a reasonable balance is our objective. There will always be some instances one could point to where a suboptimization on price competition was not achieved. Such instances should not be misinterpreted as either a lack of commitment or a failure to adhere to a policy.

ESTIMATING WEAPON SYSTEM COSTS

Unrealistically low cost eastimates have long been recognized as the beginning of cost growth problems and as a major source of program instability, "buy-ins," incorrect cost-effectiveness trade-offs, unmet force level goals, and a host of other problems. Some analysts believe low cost estimates to be the fundamental weakness in the entire system for acquiring defense hardware.

Question 1. Do you believe faulty cost estimating to be one of the fundamental weaknesses in the system for acquiring defense hardware? If not, what is, and how does low cost estimating rank as a problem?

Answer. Initiative No. 6, Budget to Most Likely Cost, is an important element of the Acquisition Improvement Program. As I indicated in my prepared statement, unrealistic cost estimating is a major cause of cost growth. In the past we have been overly optimistic about the projected outyear costs of programs. The cost growth that results from this optimism produced tincreasing instability, stretch-outs, and more cost increases. It is a vicious cycle and a difficult one to reverse.

Question 2. Please list the remedial measures in place and planned that address cost estimating and provide the Committee with a progress report on their implementatin and results to date.

Answer. We have been performing intensive, independent reviews of cost estimates to minimize the use of low initial cost estimates. We now require program managers to use independent cost estimates and also require the Service Secretaries provide an explanation of any decision leading to a choice of a budget based on the lower estimate (independent or program manager's) and to provide plans for ensuring the budget is met.

OSD held a special review of independent cost estimates of 10 major systems in 1982 (F-15, AIM-54D, F-16, LHD-1, AV-8B, Bradley, Pershing II, Navstar, DIVAD, and AMRAAM). For 1983 this special review will be expanded to 25 programs.

Because cost estimating will no doubt be a recurring problem I have included it in the six major initiatives that I intend to personally emphasize.

EXPECTED COST SAVINGS FROM MULTIYEAR PROCUREMENTS

The multiyear contracting concept, No. 3 on the list of 32 DOD acquisition improvement initiatives, was promoted as a way to save in the range of 10 to 20 percent in unit procurement cost through improved economies of scale and efficiencies in production processes, economy-of-scale lot buying decreased financial borrowing costs, better utilization of industrial facilities, and a reduction in the administrative burden of placing and administering contracts.

In Mr. Carlucci's testimony before this Committee last year, he announed that the Defense Department planned to initiate four multiyear contracts in fiscal year 1982 (the F-16, C-2 and UH-60 aircraft and the Troposcatter Radio). In Dr. DeLauer's recent testimony before the Procurement Subcommittee of the House Armed Services Committee, he stated the Defense Department had recently submitted six new multiyear candidates to begin in 1983 and eight more in 1984. Dr. DeLauer announced at that hearing that the cumulative savings resulting from these 18 multiyear contracts will exceed $4 billion.

There are, of course, a number of impediments to achieving these cost savings. To begin with substantially all, if not all, of the contracts are sole source (noncompetitive). If the negotiated price is higher than it should be, or DOD has selected the wrong clauses in the contract, the Department is locked in for three years.

Question. What specific implementing guidance has the Department of Defense issued to assure that:

(a) Current, accurate, and complete cost and pricing data is available to Government Officials at the time they negotiate these contracts.

(b) Profit rates are established at levels that are directly related to the relative degree of risk the contractor must take, and the clauses that tend to shift the risk factor significantly toward the Government are not inserted arbitrarily.

(c) The contracts can be easily revised so that various components produced by subcontractors in the first year can be switched from contractor-furnished to Government-furnished materials if determined to be advantageous to the Government.

Answer. (a) The implementing guidance for assuring that current, accurate, and complete cost or pricing data is available to Government officials is contained in the Defense Acquisition Regulations (DAR). The specific reference to the requirements for obtaining cost or pricing data is in DAR 3-807.3.

(b) The DOD guidance on profit policy is contained in the Defense Acquisition Regulations (DAR 3-808). Specific guidance to assure that profit rates are established at levels that are directly related to the degree of risk is located in DAR 3-808.6. Standard DOD contract clauses are contained in Section VII of the DAR. The DOD policy on use of these clauses is also contained in the DAR. Use of other than these standard clauses requires the approval at varying levels above the contracting officer, thus assuring that such clauses are not inserted arbitrarily.

(c) Our multiyear procurements must satisfy six key criteria before a final judgement is made to approve multiyear as a favorable strategy. Two of the criteria important to the question are 1) benefit to the government resulting from yielding substantial cost avoidance compared with conventional annual contracts and 2) degree of cost confidence that the contractor cost estimates and anticipated cost avoidance are realistic. Generally, if we have a candidate program that satisfies the multiyear criteria then it should not be necessary nor desirable to make a change to the Government-furnished material/contractor furnished material (GFM/CFM) structure of the prime contractor. In employing the multiyear strategy, the cost avoidance derived from savings resulting from the prime and all his subcontractors should in the aggregate far exceed any potential savings from selected component breakouts. If this is not true then the selection of a multiyear approach in the first instance may have been improper.

The multiyear contract arrangement does not readily lend itself to changes in the GFM/CFM mix after award. This is generally true because the savings derived from this method of contracting are multiple year savings that require an initial investment at the front-end of the contract. Our initial investment generally supports the economic order quantity principle used in the multiyear approach which is practiced by the prime and his subcontractors. For this reason a change in the GFM/CFM mix would necessitate a renegotiation of the multiyear contract and would definitely impact the anticipated cost avoidance of the multiyear program.

We recognize the benefits of component breakout and generally, on major programs, apply this technique before selecting the multiyear strategy. On most aircraft programs we breakout the engine component and occasionally apply the multiyear method to both the airframe and engine contracts. The UH-60 helicopter is a good example where we have applied multiyear to the airframe and the engine as two separate components. The B-1 is even a better example where the airframe, engine, defensive and offensive avionics are broken out and we have selected all four of these major components as candidates in fiscal year 1983 for application of the multiyear method of contracting.

We plan to continue to review our opportunities to apply the component breakout and multiyear technique on weapons programs when it is advantageous to the government.

REPLACEMENT OF THE F100 ENGINES ON F-16 AIRCRAFT

Concurrently with the development of the F401 engine for the Navy's F-14B Tomcat aircraft several years ago, the Defense Department also paid the Pratt Whitney Division of the United Technologies Corporation to develop the F100 engine for the Air Force. Presently, two F100 engines are installed in every F-15 aircraft and one F100 engine is installed in F-16 aircraft. The Air Force is apparently considering installing F110 engines (manufactured by General Electric) on the F-16 aircraft in part because the F100 engines are not sufficiently reliable for use on single-engine aircraft.

Question 1. What is the exact nature and seriousness of the problem with the F100 engine?

Answer. There are currently no serious technical problems with the F100 engine. During the 1977-80 time period, the F100 engine experienced serious engine operability and durability problems. These difficulties were further exacerbated by strikes at two vendors, and the combined effects of the technical/vendor problems severely affected F100 engine support-ability, and aircraft were not operational due to a lack of engine assets. The formation of a special Government/contractor Maintainability, Supportability Review Group (MSRG) provided increased management

attention and discipline by the Air Force and Pratt & Whitney Aircraft, and led to solutions to these technical/support problems by late calendar year 1981. However, F100 engine supportability is an area which still requires special management attention. It was the seriousness of these operability, durability and supportability problems which highlighted the need to have more than one source for the engines for our front line fighter aircraft. The planned engine competition focuses on our need to have the most durable, reliable, supportable engines which meet our operability/performance needs. Through competition we believe we can get a better business deal for the Government, including meaningful warranties/guarantees which will significantly reduce support costs.

Question 2. What was the total RDT&E expenditure for the F100 engine?

Answer. There are continuing RDT&E expenditures for the F100 engine. The totals to date are as follows:

[Then-year dollars in millions]

	Fiscal year				Total
	1981 and prior	1982	1983	1984	
Full-scale development	655.3	1.1	10.2	0.1	666.7
Component improvement program (PE 64268F) [1]	318.5	57.7	51.9	51.6	479.7
F100 DEEC/Pump Full-Scale development (PE 64223F)		2.0	39.6	33.9	75.5
Total					1,221.9

[1] Prior to fiscal year 1980, funds for this effort were in the procurement account.

Question 3. How many F100 engines have been procured? How much money has been spent to procure: F100 installed on F–15 and F–16 aircraft, concurrent and replacement spare (pipeline) F100 engines, and related peculiar spare components and repair parts:

Answer. The following is a summary of procurement to date for the F100 engine:

[Then-year dollars in millions]

	Fiscal year				Total
	1981 and prior	1982	1983	1984	
F–15 engines:					
Installs	$2,338.3	$197.7	$232.6	$285.3	$3,053.9
Quantity	1,362	72	78	96	1,608
Initial spares	$580.6	$67.2	$87.7	$145.5	$881.0
Quantity	314	23	28	45	412
Peculiar support	$64.4	$3.7	$28.3	$11.8	$108.2
F–16 engines:					
Installs	$1,329.7	$341.1	$359.5	$365.2	$2,395.5
Quantity	605	120	120	120	965
Initial spares	$301.4	$303.0	$213.5	$69.7	$887.6
Quantity	133	98	68	21	320
Peculiar support	$125.5	$28.5	$27.5	$67.6	$249.1
Replenishment spares	[1]$480.6	$280.1	[2]$265.7	TBD	$1,026.4
Total					$8,601.7
Quantities					3,305

[1] This is fiscal year 1979–81 only. Prior to fiscal 1979, the engine replenishment spares were included in F–15/F–16 A/C replenishment spares account.

[2] This is a projected number.

Question 4. If the F100 engines on the F–16 aircraft are replaced with F110 engines, what use will be made of the F100 engines, components and spare parts already procured? Is it possible that there will be substantial reductions in the F–15 aircraft program, if these F100 engine inventories can be used there?

Answer. The planned competitive program for future F-15 and F-16 engines is for new production aircraft only. There is no intent to retrofit any existing aircraft should the General Electric F110 win a part of the competition for either F-15 and/or F-16 aircraft. We will have no excess F100 inventories which could be used to offset F-15 aircraft needs.

WEAPON SYSTEM SELECTION PROCESS

Critics of DOD weapon selection believe the process favors high technology approaches to meeting mission needs, although there has been talk by the present administration of a policy of "evolutionary," rather that "revolutionary" development of weapons systems. Yet, there continue to be examples of weapon systems in development that push the state of the art or that represent technology looking for an application. V/STOL aircraft have been mentioned as example of the former while the surface effect ship program has been cited as exemplifying the latter.

Question 1. How do you feel about the criticism that the process is biased toward high technology solutions to mission needs?

Answer. The acquisition process is correctly biased toward high technology solutions. We need highly effective weapon systems because the Soviet systems are increasingly more advanced technologically and they enjoy a numerical superiority which we cannot hope to overcome because of fiscal budgetary reasons. This bias does not mean that we should choose to pursue systems which are unnecessarily complex or sophisticated. Our requirements generation, and approval process questions the need for each system characteristic. Our acquisition policy top level Directive 5000.1 requires consideration of a product improvement to an existing system as an alternative to a new development. Our acquisition improvement program initiative #3 on Pre-Planned Product Improvement (P^3I) provides for evolutionary development and phased production incorporation of high cost and high technical risk system features.

Question 2. Please provide a list of examples of recent "evolutionary" development programs.

Answer. Recent or ongoing evolutionary P^3I efforts are contained, for example, in the following programs: M-1, Bradley FV, AH-64, 155mm Howitzer, Blackhawk, Advanced Field Artillery Tactical Data System, Patriot, Lamps, Tactas, Harm, F/A-18, ASPJ, ALWT, DDGX, Captor, Trident II, SUBACs, JTIDs, AMRAAM, B-1, F-15, F-16.

Question 3. At what state in the DSARC process is the technical risk associated with the proposed acquisition program evaluated? Whose judgment is decisive in that evolution?

Answer. The technical risk of an acquisition program is addressed in the concept validation and demonstration phases of the acquisition cycle. It is during this phase that the technical risks, which include functional performance and ability to manufacture, are both addressed leading to selection of a concept to be pursued in full scale development. The assessment of these risks is developed by the system Program Manager (PM) with support of his technical cognizant activities and submitted through Service channels and ultimately to the DSARC at the Milestone II decision point. The judgment of the DSARC chairman, the USDRE, with the assistance of the DSARC principals is decisive in proceeding with the concept recommended and selected. The decision is consummated by the Secretary of Defense Decision Memorandum (SDDM).

ROLE OF THE DCAA

When the "should cost" approach is used to evaluate contractors pricing proposals, the DCAA and plant representatives roles are greatly diminished.

Question. Have these parties objected to their diminished role? If so, please elaborate.

Answer. We do not consider that "should cost" has diminished the roles of DCAA and plant representatives. We view "should cost" as a technique to supplement the efforts of DCAA and plant representatives. "Should cost" is a concept of contract pricing that employs an integrated team of Government procurement, contract administration, audit and engineering representatives to conduct a coordinated, in-depth cost analysis at the contractor's plant. In any event, we are not aware of DCAA or plant representatives objecting to their roles as part of this team concept.

ACQUISITION IMPROVEMENT INITIATIVES

Background.—The Defense Department's 32 acquisition improvement (Carlucci) initiatives were issued on April 30, 1981. At that time, Mr. Carlucci directed the Under Secretary for Research and Engineering to establish an appropriate implementing and reporting system. The system provides periodic status reporting on the 32 initiatives.

Question. Is it true that the acquisition improvement initiatives, (Carlucci Initiatives) now over two years old, are still just a memorandum and have not been issued as a permanent DoD directive? Is it true that there have been three drafts of such a directive but one or more of the Services have shot down each of the drafts? How much has been saved by costs avoided due to implementation of the Carlucci Initiatives?

Answer. Department of Defense (DoDD) 5000.1 is the topline policy directive for major system acquisition. DoDD 5000.1 is first in order of precedence for major system acquisition and it was formally issued on March 19, 1982, firmly establishing the Carlucci Initiatives as DoD policy. Department of Defense Instruction (DoDI) 5000.2 is second in order of precedence for major system acquisition and is strictly a procedure for running the Defense System Acquisition Review Council (DSARC), which is the management decisionmaking mechanism established for an indepth management review of the major weapon systems at designated milestone points. Two draft versions of DoDI 5000.2 were issued in April 1982 and October 1982 to provide interim guidance on DSARC procedures until formal issuance of DoDI 5000.2. The formal DoDI 5000.2 was issued on March 8, 1983.

Many of the initiatives will have attendant cost savings that are difficult to quantify because the improvements will simply take time (e.g., program stability, appropriate contract type, technological risk funding, improved source selection, etc). For others a cost savings or cost avoidance calculation will be equally difficult because there is no means to compare costs when one choses one alternative course of action and foregoes another. For eample, pre-planned product improvement should be less expensive than development of new equipment but there will be no means of direct comparison. Other initiative such as multiyear procurement lend themselves to savings calculations and over $4B in savings has already been attributed to this initiative alone. Nearly $2.5B in savings has been attributed to the economic production rate initiative thus far.

REALISTIC BUDGETING

Question. In your testimony before the committee you stated that one of your six major thrusts is realistic budgeting.

(a) With regard to such budgeting, is it correct to assume that an essential component is accurate historical data?

(b) If that is so, to what extent is your Department dependent upon contractor-supplied cost data?

(c) Upon what mechanisms, either in place or anticipated, do you rely on to ensure the accuracy of this contractor-supplied cost data?

Answer. (a) Yes, an essential ingredient in any budget is accurate historical data.

(b) The budget is comprised of many elements (for example RDT&E, procurement, government furnished equipment, government manpower costs etc.). Many of these elements depend heavily on contractor supplied cost data.

(c) The accuracy of contractor supplied cost data are verified by comparing the contractor's cost data to earlier data provided by the same company, comparing the contractor's cost data to industry averages and trends, and analyzing costs using mathematical models based on data accumulated from many sources. These techniques are well known and used throughout the Department of Defense.

GOVERNMENT CONTRACTING OFFICIALS

Question. (a) To what extent, if any, do you see a conflict between the military program officer's responsibility to negotiate for the best possible product and his duty to prudently steward public funds?

(b) To what extent is our present procurement program dependent on an effective and simultaneous performance of these two responsibilities?

(c) What suggestions, if any, do you have for improving the position of the negotiators on the government's side of the table?

Answer. (a) I see no inherent conflict between these two objectives.

(b) These two objectives are complementary in most respects.

(c) The effectiveness of the government negotiator can be enhanced by use of independent cost analysis and by "should cost" analysis. Both of these techniques bring in expertise outside the cognizant government program office and thereby provide the government negotiator with more information on cost.

RESPONSES OF MR. THAYER TO WRITTEN QUESTIONS SUBMITTED BY SENATOR LEVIN

PUBLICIZING

Question. Last week the committee passed a bill, S. 338, that contained new notice requirements for Solicitation of bids and for attempts to procure sole-source. In particular, the bill will require: presolicitation notice of 15 days in the Commerce Business Daily before the solicitation material or proposals should be distributed, preaward notice of 30 days in the CBD before awarding any contract, and Notice of intent to sole-source of 30 days after publication in the CBD before going ahead, unless of course the matter is of emergency importance to national security, as recognized by the committee last week. What is your opinion of these notice requirements?

Answer. S. 338 repeals the current statutory requirement for publicizing intended procurements, Section 8(e) of the Small Business Act (72 Stat. 389; 15 U.S.C. 637(e)), and establishes a new procedure for publishing advance notice of contracts. The new procedure creates burdensome and unnecessary publication requirements that serve no useful purpose. For example, S. 338 would require publishing notices for procurements (1) of perishable subsistence supplies, (2) of utility services, or (3) where only foreign sources are to be solicited. Publication of such requirements would create unnecessary paperwork, delay needed acquisitions, and result in added administrative cost without a corresponding benefit to industry or the Government. The present statute exempts these purchases from the prepublication notice requirement in recognition of the impracticality of getting wider competition. The present statute, but not S. 338, also permits procuring agencies and the Small Business Administration to agree where publication would be neither appropriate nor reasonable. Other detailed comments on S. 338 are being prepared for future testimony on the proposed legislation.

100,000 PRICE CERTIFICATION THRESHOLD

In the some bill I had an amendment that would lower the dollar threshold for requirement of price certification by the contractor form $500,000 to $100,000 for the Department of Defense—restoring the level that was raised two years ago in the fiscal year 1982 DOD Authorization Bill. The Bill language also applied the statutory language on the requirement for price certification to the rest of the federal government, it had been applied by regulation, and my amendment made that threshold $100,000 as well.

Question. Why would DOD be opposed to such a move since the certification can be very useful for resolution of later disputes?

GAO claims the cost of administration is less than the money saved?

Answer. DOD would not favor a move to reduce the threshold from the current level of $500,000 to $100,000 for several reasons. First, we proposed the increase from $100,000 to $500,000, in part, to account for the impact of inflation that has occurred in the national economy, since the inception of the "Truth-in-Negotiations" Act in 1962. Secondly, to ameliorate paperwork burdens on contractors and to permit more efficient use of DOD resources. Increasing the threshold to $500,000 has significantly reduced for the Government and its contractors the volume of paperwork incident to administering the requirements of the Act. The increased threshold, however, has not diminished the value of the Act because the total dollar value of DOD procurement subject to the Act has been reduced by a relatively insignificant amount.

ACQUISITION INITIATIVES

Question. Secretary Thayer, in your testimony you estimate that the 32 acquisition initiatives and other improvements to management and operations will produce about $30 billion in savings by the end of fiscal year 1988. Will you provide a list for the record that breaks this savings figure into actions taken, and by initiative the dollar amount saved by each?

Answer. The fiscal year 1984 Economy and Efficiency savings is undergoing final review and will be available shortly. However, major changes produced by the Carlucci initiatives are as follows:

DSARC process.—Seven of the initiatives have resulted in a streamlining of the Defense System Acquisition Review Council (DSARC) process to more closely integrate it with the Defense Program Planning and Budgeting System (PPBS). As a consequence, there is better assurance that the impact of future costs are properly weighed when approval of weapon systems development or production is requested.

Preplanned product improvement (PPI).—Under this initiative we are making system changes in smaller, less risky steps in an evolutionary approach to higher performance. This approach has been implemented into both existing and new development programs, for example the 120mm gun for the M-1 Tank and the engine for the JVX vertical take-off aircraft program.

Multiyear contracting.—Significant progress has been made. Through economic lot purchases, avoidance of line stoppages, reduction of the usual annual proposal and negotiation process, and improved worker productivity, significant savings can be achieved.

Competition.—It is firm DoD policy to purchase required materials and services, including major weapon systems, on a competitive basis whenever possible. Just about all of our major programs have initial competition because the development contractor is selected through a competitive source selection process. After selection of a single prime production contractor, significant competitive procurement takes place at the subsystem and vendor levels.

Economic production rates.—Last year we reported $2.3 billion savings from more efficient rates. This year we have proposed production rate changes which increase these savings.

Readiness and support.—We have established a separate internal budget report to insure that support funding for our major weapons system is funded adequately. This effort should result in improved sortie rates, lower support costs, less demanding manpower skills, and a lessening of logistic support forces in the field.

Effective budgeting.—The three initiatives addressed here (budget to most likely cost, budget for technological risk, budget for inflation) are being fully implemented. For example, the Services are making independent cost estimates on major programs. Where such costs are higher than projected by the program manager, the Service Secretary must explicitly explain his reasons for choosing the lesser estimate to the Secretary of Defense. Such efforts will help insure realistic cost projection in the outyears.

Others.—While less visible, other initiatives are being pursued. For example, a test program is underway with industry to stimulate capital investment; some 30 policy directives are being reworked to simplify demands on the Services and industry; and efforts are continuing to further reduce administrative costs.

CONTRACTOR PAST PERFORMANCE

Question. One of the original initiatives by your predecessor, Secretary Carlucci involved considering the past cost performance by the contractor before awarding future contracts. What has been done to implement this initiative?

In your statement you make reference to this initiative. How many contracts have been denied in the past 2 years on the basis of poor prior performance?

Answer. Giving emphasis to past performance in source selections must be done carefully to ensure that past performance is used as an indicator of what the offeror's future performance under a proposed contract will be. For this, examples of past performance (good or bad) must be recent and relevant to be a reasonable predictor. For instance, performance under a contract for an electronic system may or may not be relevant to procurement of a weapon system from another division of the company. Further, we have to be certain that a contractor's poor performance (say, in missing schedule milestones) was not due to government actions such as changes, late delivery of government-furnished property, and the like. In all instances, each contract action stands on its own and we can neither punish nor reward a contractor for what he did or didn't do under another contract by either awarding or withholding a new contract.

We are revising our source selection directive to emphasize contractor past performance, schedule realism, and credibility of cost estimates as source selection criteria. The revised directive is scheduled to be complete in December 1983.

I am not personally aware of any major contracts that have been denied in the past 2 years on the basis of poor prior performance.

SAVINGS BY INCREASED PRODUCTION RATE

Mr. Secretary, on page 11 of your prepared testimony you state that DOD has projected a savings of $2.3 billion from increased production rates on 18 programs.

Question. Will you furnish for the record a list of those programs, the increase in rate for each program, and the corresponding increase in cost from those increased purchases as well as the savings from higher production rates?

Answer. The following table lists the 18 programs, the increase in TOA in fiscal year 1983 which was incurred by increasing their rates, and the net saving for fiscal year 1981 through fiscal year 1987. This list has changed in the process of constructing the fiscal year 1984 budget as has the procurement profile for some of the programs. The projected savings effective with the fiscal year 1984 budget is now estimated at $2.6B through fiscal year 1988. The economies and efficiencies submittal will be sent to the Congress shortly and will contain detailed backup material, procurement profiles, and savings computations on the new listing. Estimated savings are derived from comparing the unit cost of each program at its previously programed rates to the cost of the same number of items procured at the higher rates. The higher rates, in addition to reducing unit cost, result in delivering more items of equipment to the field in the same time period.

ECONOMIC PRODUCTION RATES

[Dollars in millions]

	Fiscal year 1983 TOA increase	Net savings (fiscal year 1981–87)
AIM–9M missiles		$74.2
E–3A aircraft		159.0
F–15 aircraft	$1,072.1	42.6
RF–4 IR Sensors	19.3	13.1
Defense satellites	207.2	64.0
AN/SSQ–47 sonobuoys		3.2
AN/BQQ–5 sonars		1.3
TSEC/KG–45	2.8	.8
SH–60B helicopters	55.7	217.5
CH–53E helicopters	81.8	20.9
Common ECM Equipment	61.7	18.5
A–6E aircraft	109.6	58.4
EA–6A aircraft	169.6	36.8
F–14 aircraft	562.5	70.9
F–16 aircraft	435.8	747.0
Laser Hellfire missiles	130.0	189.8
Fighting vehicle systems	141.3	236.0
DIVAD gun systems	349.0	313.1
Total	3,398.4	2,267.1

ELIMINATED OR RESTRUCTURED PROGRAMS

Question. I understand that DOD has eliminated or restructured 120 programs in the last 2 years that have not proven cost effective. Will you provide a list of these programs for the record?

Answer. The fiscal year 1984 edition of the Economies and Efficiencies package will be released by the Secretary shortly and we will provide you with a copy at that time. It contains the exhibit that your question refers to on elimination/reduction of marginal programs.

[Short recess.]

Chairman ROTH. The committee will please be in order.

At this time, we will proceed with Walton H. Sheley, Jr., Director of the Missions Analysis and Systems Acquisition Division of GAO.

We are delighted to have you here today, and I would appreciate it if you would introduce your colleagues and give a summary of your statement.

TESTIMONY OF WALTON H. SHELEY, JR., DIRECTOR, MISSIONS ANALYSIS AND SYSTEMS ACQUISITION DIVISION, GENERAL ACCOUNTING OFFICE, ACCOMPANIED BY ROBERT GILROY, GENERAL PROCUREMENT, GAO, AND GEORGE J. WOODITCH, SPECIAL PROJECTS, GAO

Mr. SHELEY. On my right is Mr. Robert Gilroy in charge of our general procurement area, and on my left, George J. Wooditch, handling special projects in my division, primarily the requests we are dealing with for you right now. I might say at the outset, I am pleased to be here. I will make the remarks very brief. I will even cut it back from the executive summary.

Several of the topics discussed earlier this morning are matters we in the General Accounting Office have been very concerned about for a number of years, going back as far as 1969.

We are encouraged with the initiative to budget to more realistic costs. It is very difficult to do, but the penalties for not doing so are built-in cost growth. You are going to have cost growth if you low ball it, and when the realism sets in, that happens.

Another topic that I would talk to just briefly is joint programs. There is a general myth that joint programs save money. Well, we have been looking, at your request, at a number of programs, and we have yet to find one that really worked. That is not to say that services have not used other services' hardware after they have been developed and produced. A case in point is the F-4 aircraft that was initially developed by the Navy, but it was not a joint program. The Air Force has successfully in the pact used and still uses the F-4 airplanes, but it was not a joint program.

The Secretary this morning mentioned multiyear contracting as one of the initiatives that he is very much interested in. GAO has been interested in this as far back as 1969. Secretary Thayer threw out a number; as I recall it, $4 billion plus in savings resulting from that. I have a little bit of concern that that is a good number. That may be how he projects the number based on a side-by-side comparison, single year verses multiyear, but it does not take into account the discounting of money. I would not want to leave any impression at all that I have anything against multiyear contracting. To the contrary, I support it, and I think it encourages one of the things that the Secretary pointed out that is very important, and that is program stability; that once you go into multiyear contracting, you do develop a degree of program stability, you do not have the year-to-year perturbations and you are bound to save money. How much, I do not know; you would be continually playing a "what-if" game as to what the circumstances might have been if you had not had the multiyear contract.

With those brief remarks, I will make myself available for questioning, Mr. Chairman.

Chairman ROTH. Mr. Sheley, I understand in a way, that this is your swan song, that you will soon be departing from the General Accounting Office. I would personally like to express my apprecia-

tion and thanks for the work you have done in this very complicated area. It is an area where it is easy to demagog but difficult to find any conclusions.

Mr. SHELEY. I thank you for your remarks, sir.

Chairman ROTH. GAO has come out with a report that I know shows there has been an increase of costs in the major weapons systems of 36 percent. Is that correct?

Mr. SHELEY. Well, the report is not——

Chairman ROTH. For the last year.

Mr. SHELEY. For the last year. But the report you are referring to I do not believe has actually been published yet, Senator. It will be published soon, but those numbers are approximately correct. That would be as of September 30, 1982, which would not take into account the subject of the SAR's that were much discussed earlier this morning.

I do not know what that figure might be at this point. We would probably have to relook at it.

Chairman ROTH. One of my questions, of course, is that we have some kind of indication in the SAR figures that there has been some improvement, notwithstanding that it is a somewhat inaccurate characterization because of less inflation and the fact that some programs have been rolled over.

But my question to you is, A 36-percent increase during the last year would be a pretty substantial increase, would it not? Does that include quantities and inflation?

Mr. SHELEY. That would include quantities, inflation, engineering changes, almost any of the factors that drive costs up that are included in the SAR's; yes.

Chairman ROTH. One of the reasons I raise that is it seems to me that apparently we have been dealing with a mixed bag as far as figures. If I am going to be critical of a 36-percent increase, that does contain some of the very elements that all of us were critical of the Pentagon in its release yesterday. It seems that to get a better handle on what is happening to costs, it does not help much to say there is a 36-percent increase if that involves quantity and if that involves inflation. It really does not talk about management efficiency, does it?

Mr. SHELEY. No, sir, and our report will show the various categories that drove that cost increase, whether it be inflation, whether it be quantity increases, et cetera.

Chairman ROTH. I must say, I think it is important that both the Pentagon and all Government agencies get away from this mixed bag that we seem to be using, because 36 percent, whether it is favorable or unfavorable, I do not think tells the Congress much as to the cost effectiveness of the Pentagon management.

Mr. SHELEY. Not at all, not unless you illustrate what drove that particular amount of increase broken down into its component parts.

Chairman ROTH. Let me ask you again: I think that report covers a year and does not cover the quarter of the release made yesterday by the Pentagon, so they really are covering different periods.

Mr. SHELEY. Basically, that is true. However, the Pentagon, to some degree, unless there is a major change sometime during the year, plays catchup on the December 31 SAR's. That is when you

will see most of the changes made in the SAR report. Sometimes during the year, there are some changes, but the big change comes about as of December 31 each year.

Chairman ROTH. The next question I would like to ask you is, can you comment either on your personal observation or GAO studies as to whether there has been an improvement in cost effectiveness, in your judgment, during this last quarter? I am not talking about quantity, changes, and I am not talking about inflation. I am talking about management effectiveness.

Mr. SHELEY. I see a new seriousness—and this is strictly a personal observation, at this point, and I could not support this—but in my conversations with some of the people at the very highest level of the Department, particularly in the services, I have seen an awareness of the need to control costs that I have not seen in some time.

Particularly I notice it in the Army. I have had a number of conversations with the——

Chairman ROTH. I am sorry, I could not quite hear you. What was that?

Mr. SHELEY. In the Army, particularly in the Army. I have had some conversations with people like Secretary Ambrose, and I am very impressed with the sincerity with which he is trying to tackle the problem. How well he is going to come out in the end is still up in the air, but I sense a seriousness that I have not seen over there for a while.

Chairman ROTH. About cost effectiveness?

Mr. SHELEY. About cost effectiveness.

Chairman ROTH. I think that is very encouraging. It goes back to a statement that Secretary Thayer made, of which I partly agree, but which I also partly disagree. He said he did not think reorganization was important, that it was the intent and the purpose of the individuals in change that really counts.

I happen to think both are important, but I am encouraged by your observations from GAO that you do see some seriousness about trying to do something about costs.

The one thing that I would like to have you comment—maybe not on behalf of GAO, but just based upon your experiences concerns structural reform in DOD. I was sorry I did not get back to address some further questions to Secretary Thayer because I was concerned by the fact that he at least indicated for the moment that they are not looking at any major reforms.

There have been a number of very thoughtful articles by what I would call essentially pro-defense people who are saying we need some structural changes in DOD and who are saying that only so much can be done with the present system.

I happen to think that some of the moves that they suggest are the right ones. I think there has got to be renewed emphasis on competition. That is probably the most important one in my judgment. But there have been some suggestion that we need some very radical reform in the institutional structure of the Defense Department, that one of the problems is, for example, duplication of weapons in procurement between the various services which has resulted in waste and abuse if not more fraud. There have also been suggestions that the present system has resulted in underesti-

mating costs in order to get the weapons systems started and once they get started, the are very difficult to stop.

Do you have any thoughts about institutional reform?

Mr. SHELEY. I think one of the things that eventually is going to have to be faced is there are just more systems in development than can ever be afforded. I think there has to be some type of better look or better control over those systems emerging from the R&D level into the engineering development level.

This, I think is what complicates a lot of the problems over there, because once that system transitions over into full scale development and starts getting development funds, it is competing with every other system. Like all things, it develops a constituency. It develops a life of its own, and it has its adherents, and it gets awfully hard to get the wooden stake through the vampire's heart once it is started. The real control point, in my mind, is keeping technology in the R&D stage and pulling them out only when you have a real need for them, developing that technology.

The way it appears to me is that they automatically go from one stage to the other, and then you get a whole conglomeration of items in there. That is not saying they are not worth it, but there is a neccessity to establish priorities among all the projects. To me, the point where this can best be done is when a system emerges from R&D and proceeds into the engineering development phase.

Chairman ROTH. The one point I wanted to make to the Secretary—and I would hope if there is any one from the Defense Department still here that they get back to him on this—is that they are going to have to set priorities. There is no way that they can have every thing they want.

I think that is at least the perception that has gotten out to the public and in the Halls of Congress. I think you are absolutely right; a technique or means has to be set up to determine what is important and to eliminate any unessential programs. That is something that we are going to have to look into later.

Many other foreign governments centralize procurement. R&D and procurement is either in a separate agency or is outside the services, and that has been recommended by some of the Defense scholars.

Would you care to comment on that?

Mr. SHELEY. I think that is what is referred to as the "purple suit complex." You take them totally away from professional procurement people? Is that the type of thing you are referring to?

I do not know. I think you would get mixed results in something like that. I would not condemn it, but at the same time I would be a little hesitant in my support of it. The benefits would have to be demonstrated more conclusively than they have in the past.

Chairman ROTH. From your testimony, I gather that you think that there has been some improvement in acquisition costs.

Mr. SHELEY. Well, I will not say that there has been improvement. I see a seriousness about trying to get improvements in it.

Chairman ROTH. It is still too early?

Mr. SHELEY. It is still a little too early to tell. In just taking the last SAR report, and I think Secretary Thayer referred to that, the trend has been started. In my opinion, 1 year a trend does not make. It is a step in the right direction, and it is a change for 1

year, but I am not willing to accept it as a trend, at this point in time, in which you are going to see ever decreasing costs in weapons systems.

Chairman ROTH. Would you be able to point out any weapons systems where you think there has been improvement or, on the other hand, other weapon systems that are glaring examples of increased costs?

Mr. SHELEY. Two systems that come to mind appear to me to be the relatively well-managed systems over the period of time: One is the F-16 airplane program. There were a lot of things going for it at the time that program began, but nevertheless, the involvement of European allies in that program, I think, has been a factor in it as well. I have been impressed with that one. When I am asked to comment upon a good program, I will comment on that particular one as having been a good program. The multiple-launch rocket system, incidentally built by Secretary Thayer's old firm, was a reasonably good program, too.

Chairman ROTH. What was the latter one?

Mr. SHELEY. The multiple launch rocket system.

Chairman ROTH. OK.

Mr. SHELEY. There were bad ones over the years, the Viper antitank weapon, was a disgrace. We recommended killing that program I don't know how many times. It is now being competed against some foreign systems.

Tests begin next month. With the requests from Senator Rudman, we will be observing those tests and making sure that the game is played square and we get a fair shake.

That is one bad system. There are others.

Chairman ROTH. Let me ask you: Is there anything that we can extract from those activities? Why is the F-16 mentioned? The European involvement?

What are the factors that made that an effective procurement, whereas in these other cases, we find the opposite?

Is it personnel? Is it the nature of the weapon or what?

Mr. SHELEY. Well, it is a combination, of all of those. First and foremost in the case of the F-16, it represented a rather large buy of aircraft, the first one in quite awhile, with the European buys included with the U.S. buy on the aircraft. Also at the time, the aerospace industry itself was not at the peak of health. The contractors were willing to get their pencils pretty sharp.

The Air Force also had the ability to go out, particularly at the subcontract level, and buy a 998 ship set buy. That is a large quantity buy in the airplane business today, but they were able to do that at the subcontractor level because of the commitment of the United States and the allies to the program. Those were very plus factors in that case.

Chairman ROTH. Let me add a comment on that, because, as you probably know, several of us, Senator Nunn, Senator Glenn, and myself, have pushed broader procurement. We think NATO ought to begin to buy weapons systems as a unit to get the economy of size.

As I understand what you are saying here, you are saying the reason for the savings and the effectiveness of the procurement is

economy of size, which was possible because, for once, the NATO allies were able to agree on a common system.

Is that correct?

Mr. SHELEY. That is correct. We have understandings with our NATO allies; it is a two-way street. It goes back quite a number of years, but the real hard facts of the world are that the Europeans view that as not a two-way street but "Buy American."

Whether they are right or wrong on that depends on at what point in time you look at it, there being not an awful lot of technology that has come this way from Europe.

One system that comes to mind was the Roland missile. We brought that; it was a French and German group that developed this antiaircraft system.

What did we do when we brought it over here? We reengineered it.

Chairman ROTH. I guess the point I want to make, if I understand your testimony, is that larger procurement is one meaningful way of making savings.

Mr. SHELEY. That is correct, larger and more stable procurement has the tendency to keep the prices down. I wouldn't want to be construed as saying buy at the low end of the mix to buy large quantities by any means.

Chairman ROTH. No.

One of the principal aims of the Carlucci initiatives has been to decentralize responsibility to the service level.

Do you feel this is effective, or do you think it has gone too far and it is going in the opposite direction of what I was suggesting earlier?

Mr. SHELEY. One plus that I can think of is that it at least removes one layer of the bureaucracy from reviewing decisions. To that degree it is a plus. I think it is a little too early, again, to tell how well that is working. There is not enough decisions through that process yet to sit back and take a totally objective view and say it is or is not a good thing, but I would support the concept of it if, for no other reason, it reduces the bureaucracy involved in the decisionmaking process.

Chairman ROTH. Is part of the problem that DOD has built such a bureaucracy perhaps to answer to Congress? Does that add to the cost?

Mr. SHELEY. I think you and Senator Cohen were very candid—and it was very refreshing—to admit that Congress has a problem, is part of the problem and has to look inward to itself as to what it has to do to help allieviate some of these. But I guess over the years in the acquisition business, additional bureaucratic layers have been interjected into the decisionmaking process, and it is a very cumbersome process to get a decision ratified.

There is an awful lot of people that can say no, but very few people in that chain can say yes.

The decentralization that has been proposed in the Carlucci initiatives puts that yes level down one notch lower in the bureaucracy in some cases.

Chairman ROTH. My last question—I am sure you are aware of Mr. Spinney's testimony before the Senate Armed Services Com-

mittee in which he stated that there was a systematic tendency to underestimate future costs of weapons systems.

Do you agree that costs are systematically underestimated, and would you agree that current systems are underfunded by roughly 30 percent?

Mr. SHELEY. I am not privy to the data with which he arrived at the underfunding of 30 percent. I really didn't look at that at all, so I really couldn't comment on that. As to systematically understating, that has a connotation to it that I am not sure was intended.

To me, that sounds like somebody is throwing something out, trying to play some games, but I do feel that there is a high degree of optimism when a major system starts.

There are some assumptions made that if people were really serious about it, they wouldn't make. One, everybody thinks there is not going to be any technological problems with the system, we are not going to run into real development problems with new technology; two, there is an assumption made that the funds needed to produce this item in an economical manner and at the lowest cost rate, are going to be available at the time that they are needed to do that.

I just haven't seen that. I think the initial estimates are seriously flawed when those assumptions are there. That leads to what I was talking about in my brief opening remarks, that overoptimism in the beginning guarantees you built-in cost growth, not cost overrun, but cost growth on that program, because if you go in with that rosy optimistic estimate and then you do run into technological problems—and they are going to be there—and you are not always going to have all the funds met you need to do the job that you want at the time you are doing the job, you are guaranteeing that those numbers are going to go up, just automatically.

Chairman ROTH. Let me ask you this final question:

You heard the discussions—and I was encouraged by the fact that the Secretary was taking the initiative to try to develop more meaningful figures.

I would appreciate, if you could, in writing, what recommendations you might make with respect to the SAR. What kind of figures would be more meaningful and helpful in evaluating the effectiveness of Pentagon management?

Furthermore, I would ask you, either now or later, if you have any suggestion as to the areas of inquiry that this committee might make to be constructive in trying to get better cost performance.

Mr. SHELEY. I would be happy to supply that to you for the record, sir.

[The information referred to follows:]

U.S. GENERAL ACCOUNTING OFFICE,
Washington, D.C., April 18, 1983.

Hon. WILLIAM V. ROTH, Jr.,
Chairman, Governmental Affairs Committee,
U.S. Senate.

DEAR MR. CHAIRMAN: It was my pleasure to have the opportunity to appear before you and your Committee on March 23, 1983. At that time you asked what recommendations we would make to improve the Selected Acquisition Reports (SARs).

On February 17, 1983, I outlined our position on the SARs in a letter to the Chairman of the Senate Armed Services Committee. A copy of that letter is attached. As

stated in the letter, we felt that the changes being made to the SARs and the Unit Cost Reports (UCRs) as a result of recent legislation should improve congressional oversight of major defense acquisitions. We said we plan to monitor the Department of Defense's (DOD) efforts to comply with the revised reporting requirements.

At this time, we still feel that the new SARs and UCRs can provide the Congress with good insights on program status and progress. The SAR originated in the late 1960s as a comprehensive report reflecting a program's original objectives in terms of cost, schedule, and performance; changes to the program; and current estimates. Generally, SARs are difficult to comprehend unless tracked quarterly. UCRs are a relatively new requirement which can readily highlight issues for the Congress. We feel they have the potential to be a useful tool in assessing current management of specific major weapon programs.

The first UCRs were submitted to the Congress in 1982. They are exception type reports triggered by a breach to an established threshold for a major weapon system. The major system must be included in the SAR system before a UCR will be prepared. UCRs are different from SARs in that they are required when certain cost thresholds are breached rather than on a prearranged calendar date. If properly implemented, they can provide more timely information to the Congress than the SARs. The UCRs highlight major issues in a program by requiring program managers to report significant changes to total program unit cost, current year procurement unit cost, contract cost, as well as schedule and performance.

As indicated, SARs are difficult to follow but this could be corrected over time. however, some important changes with which we concur have been recently made.

The 1983 DOD Authorization Act changed the SAR reporting requirements in several ways:

The Act changed the criteria for determining which systems are to be reported on the SAR. The new criteria requires SAR reports for all systems expected to cost more than $200 million in research and development funds or a total expenditure for procurement exceeding $1 billion expressed in fiscal year 1980 dollars. However, upon request, reporting requirements may be waived by the Armed Services Committees.

The Act requires reporting to start as soon as practicable. Previously, SARs were initiated when a system entered into full scale development.

The Act no longer requires a full SAR report to be developed each quarter. An abbreviated SAR, known as the Quarterly Selected Acquisition Report, is to be reported in the second, third, and fourth quarters of the fiscal year for those programs in which there is a change. DOD is no longer required to prepare SARs for these three quarters if there is no change in the program.

Using the new SAR reporting requirments DOD has reported that, as of December 31, 1982: 60 systems were on SARs; an increase of 14 over September 30, 1982; 12 systems were to be put on SAR in the near future; and 55 waivers were requested.

The first abbreviated quarterly SARs, if needed, will be submitted about April 30, 1983.

At this time we believe it is premature to speculate on the need for additional changes to the SAR or UCR. However, we feel there are two areas that need to be watched carefully.

The first is the implementation of the UCR reporting requirement. The UCR was required by the Congress because the SARs were not providing timely information about the problems confronting program managers in controlling cost, schedule, and performance. The Congress, in order to prevent the unpleasant surprises inherent in an inadequate and delayed reporting system, developed the UCR. We feel that the determining factor in assessing the degree of success of UCRs will be the objectiveness and completeness of the reports originating from program managers.

The second area to be carefully watched concerns the large number of waivers from the SAR that are being requested by DOD. It should be clearly understood that any waiver relieving DOD of SAR reporting on an individual major weapon program also relieves DOD of the UCR requirement. In essence, there would not be automatic notice to the Congress that a program has or may breach established threshholds. Thus, waiver requests, particularly at this critical stage when new reporting requirements are being introduced, should be evaluated very carefully and all congressional options protected.

You also stated that you planned a number of hearings in the next six months on a variety of aspects of DOD's acquisition management, including cost estimating, test and evaluation, and multiyear contracting. I believe that these subjects cover the more important areas where management improvements can be made. We will be happy to work with you and your committee in any of these areas where you feel

we can be of help. We will also contact you if other possible areas of inquiry come to our attention in the future.

It has been my pleasure to work with you and your Committee during my career with the General Accounting Office.

Sincerely yours,

W. H. SHELEY, Jr.,
Director.

Enclosure.

U.S. GENERAL ACCOUNTING OFFICE,
Washington, D.C., February 17, 1983.

Hon. JOHN G. TOWER,
Chairman, Committee on Armed Services,
U.S. Senate.

DEAR MR. CHAIRMAN: On February 5, 1982, you asked us to examine all unit cost reports submitted to the Congress and, as part of a longer term effort, to study the Selected Acquisition Reporting (SAR) system and suggest improvements.

In an earlier report,[1] we advised you of the results of our review of 19 unit cost reports. We felt the Department of Defense (DOD) had made a dedicated and reasonably successful effort to comply with the unit cost reporting requirements of Public Law 97-86. We also said that, in the interest of improving the efficiency of reporting, consideration should be given to combining unit cost reports with a modified SAR system.

Since that time, the 1983 Defense Authorization Act (Public Law 97-252, Sept. 8, 1982) modified SAR legislation and gave permanence to the requirement for submitting unit cost reports to the Congress. These changes, which took effect January 1, 1983, should improve congressional oversight of major defense acquisitions. At this point, it appears desirable to allow the new procedures to function for a period of time before suggesting any additional changes. As part of our continuing interest in the quality of the information reported by the DOD to the Congress, we will monitor DOD's efforts to comply with the revised reporting requirements.

Regarding unit cost reports, we will promptly review and analyze those reports after they are submitted to the Congress.

We are sending copies of this letter to the Chairmen, House Committee on Armed Services, House and Senate Committees on Appropriations, House Committee on Government Operations, and Senate Committee on Governmental Affairs. Copies are also being sent to the Secretary of Defense.

Sincerely Yours,

W. H. SHELEY, Jr.,
Director.

Chairman ROTH. Gentlemen, I appreciate your being here very much. Again, I want to thank you and congratulate you for your good work.

Mr. SHELEY. Thank you, sir.

[Mr. Sheley's prepared statement and responses to written questions from Senator Roth to GAO follow:]

[1] GAO/MASAD-82-36, May 10, 1982.

STATEMENT OF

WALTON H. SHELEY, JR., DIRECTOR

MISSION ANALYSIS AND SYSTEMS ACQUISITION DIVISION

Mr. Chairman and Members:

I am pleased to be here today to discuss GAO's efforts in the weapon systems development and acquisition area. I will discuss the cost and cost growth of major programs; issues from studies of major weapon programs we recently forwarded to the Congress; studies we are doing in the area of cost estimating, joint service programs, and test and evaluation in systems acquisition; two of Defense's acquisition Improvement initiatives--amendment of Cost Accounting Standard 409 and multiyear contracting; and Executive Order 12352 outlining the President's mandate for procurement reform.

COST AND COST GROWTH

Each year, for the past several years, we have issued a report on the financial status of major defense and civil acquisitions. For our forthcoming status report, agencies supplied data on 443 active civil and defense acquisitions with a total estimated cost at completion of $832 billion. Preliminary analysis of the data shows that, depending on when one begins to measure, the cost growth for these major acquisitions ranges between $434 billion and $324 billion. The difference depends on whether you measure from initial estimates that the Congress used to base its first approval or

from more refined estimates made after a project has been better defined.

As of September 30, 1982, 271 active civil acquisitions, including Corps of Engineers civil works, were in existence. These acquisitions' total estimated cost was $100.6 billion. Cost growth for the civil acquisitions, where comparable data was supplied, was $35.2 billion, about 57 percent over the refined estimates.

The Department of Defense (DOD) supplied data on 172 acquisitions having a total estimated cost of $731.7 billion or about 88 percent of all federal acquisitions. These acquisitions had a cost growth of $386.9 billion, about 170 percent, over their initial estimates or $335.6 billion, about 114 percent, over their refined estimates.

Of the 172 defense acquisitions, DOD reported data on 47 weapon systems, costing $457 billion, to the Congress via Selected Acquisition Reports (SAR). They reported that, as of September 30, 1982, these systems increased $281 billion, or about 160 percent, over their refined estimates.
DOD supplied data on 72 non SAR weapon systems which have a total estimated cost at completion of $183 billion. These

systems increased $54 billion, about 46 percent, over refined estimates.

We have repeatedly said that the cause of cost growth in federal acquisitions is a complex problem involving economics, budget priority decisions, political decisions, and program and project management policies and practices. Factors accounting for cost growth are generally interrelated and will vary in importance depending on the type of acquisition being analyzed. Some cost growth is beyond the control of management. The most pronounced has been inflation which has accounted for about one-third historically. Recent cost growth, or more correctly in this case increases in costs, have been due to the administration's efforts to build up defense capabilities, by increasing the number of aircraft, missiles, and so forth, over that originally planned. To illustrate, during fiscal year 1982, the total estimated cost of 38 of the acquisitions reported on the Selected Acquisition Reports increased $125 billion due principally to quantity increases.

Historically, cost growth has been a much discussed yet persistent problem. Hundreds of studies have been done, still, I feel a good deal of cost growth could be avoided. The failure to develop reliable estimates results in cost

growth that is built-in, that is, cost growth that could have been avoided if more time, attention, and realism was used in developing estimates. All too often optimistic estimates are used to gain approval for acquisitions. Once a decision is made on the basis of faulty estimates, it may take years before real costs surface. During the intervening years, the Congress and agency management are trying to make informed decisions about initiating, continuing, modifying, and canceling projects.

At your request, Mr. Chairman, we initiated a study of DOD's cost estimating process. I plan to discuss the status of that work later on in my statement.

ISSUES FROM REVIEWS OF SELECTED WEAPON SYSTEMS

Each year we select some 20 to 25 individual weapon systems for a detailed review. If appropriate, we prepare reports on these systems and furnish them to the Congress.

Many of these reports are classified and for several years now we have issued a report which summarizes, in an unclassified form, the issues in our reports. Since these systems are in various stages of the acquisition process and the categories are interdependent, an issue may become more or

less serious over time depending on how and when DOD chooses to address it. I would like to discuss some of the major issues we have found in our reviews this past year. Attachment I identifies the systems we examined and the issues discussed in each report.

We identified six programs that have operational or performance limitations which questions the capability of the system to function as designed or expected in its threat environment. For example, we reported that the Wide Area Anti-armor Cluster Munition will not give the Air Force the capability it needs, will not perform as required, and is little or no better than munitions in the existing inventory.

Hand in hand with the operational or performance limitations is the question of operational requirements--those approved characteristics considered necessary for the system to meet a needed capability. These requirements are often modified or changed as directed by development results, changes in the environment, threat, and so forth. We have questioned some aspects of the operational requirements in six of our reviews. For example, we reported that:

--DOD did not evaluate the Antisatellite Weapon System's current air-launched minature vehicle's performance against the current Joint Chief of Staff's antisatellite requirements.

--The acquisition of the Over-the-Horizon Backscatter radar system as now planned is questionable, considering the threat described in intelligence reports and the alternatives which exist, such as planned future development of tactical warning systems and the use of existing airborne warning systems.

In four programs, we found problems with logistic support and reliability, maintainability, and availability. These issues, if not corrected, will affect the readiness, mission capability, and sustainability of a weapon system. Often these areas are not given sufficient attention in the development and testing of a system and therefore become major problems when the system is fielded. For example:

--Sophisticated and unproven field maintenance test sets for the Sergeant York should be tested under the stressful conditions that may be encountered before new maintenance concepts are formulated.

--Improvements to the Patriot's maintenance software are needed before the system can be adequately supported in the field.

An issue we have been looking at more closely in the past several years is affordability--is there sufficient fiscal resources to effectively and efficiently support the weapon system acquisitions. Increasing, incomplete, or uncertain program costs raise questions concerning the continued availability of program funds and could, in some instances, disrupt planned procurements. Nine of the weapon programs presented have experienced cost increases which raise the question of whether sufficient funds will be made available to procure enough quantities to meet force level requirements. Some examples are:

--The Army Helicopter Improvement Program has doubled in cost and additional increases can be anticipated since its capabilities have not been demonstrated and because of program uncertainties.

--The Patriot cost has nearly doubled in the last two years and some of the same factors are still present, making further cost increases likely and therefore available funding may not be sufficient to maintain the planned procurement schedule.

--The DDG-51 destroyer has increased in cost to the point where the Chief of Naval Operations has said that it is not affordable and is not a lower cost alternative to the CG-47 as the Navy had intended.

Tests are conducted during all phases of the acquisition cycle. We identified five systems in which we questioned the adequacy of the testing. Insufficient testing can adversely affect the systems' effectiveness, cost, or availability for deployment. For example:

--Government reliability, maintainability, and availability testing on the Sergeant York was canceled because the prototype was deemed unsuitable for testing, and the testing will not be done until production is underway.

--The accelerated test program for the Light Armored Vehicle program did not provide sufficient reliability, maintainability, availability, and durability testing before the production contractor was to be selected.

The subject of testing is a serious concern and draws almost as much attention as the cost growth issue. It has been the

subject of numerous studies over the past 10 to 15 years, including many by GAO. We currently have several reviews underway that address this concern which I will discuss later.

The last issue area I will discuss is program management. In reviews on four programs, we have questioned planning, organizing, controlling, and evaluating the use of resources, that is, ongoing actions which are necessary to field an effective and supportable system. For example:

--On the positive side, the AH-64 and Hellfire programs have benefited from the close attention of the Under Secretary of the Army, particularly through his efforts to contain cost growth and to oversee areas of production uncertainties.

--On the other hand, the acquisition strategy for the Sergeant York places greater priority on adhering to the schedule than to correcting some serious system performance problems.

--The validation phase schedule for Advanced Medium Range Air-to-Air Missile proved to be unrealistic and the full-scale development schedule seems to be no less ambitious.

COST ESTIMATING

As I mentioned earlier Mr. Chairman, we initiated, at your request, a study of DOD's cost estimating and reporting procedures for major weapon systems. We have selected seven weapon systems in different stages of the acquisition cycle to serve as case studies for this review. We are looking at the entire cost estimating process from the development of the estimate, through the use of the estimate, to the final reporting of the estimate to the Congress. The target date for our report to you is about mid-summer.

At this time, we have a number of issues that we are attempting to develop but have not yet reached a final conclusion. For example, preliminary indications are:

--Program cost estimates are not used as a tool to establish cost discipline on major weapon system programs.

--Estimates are force fitted to conform to the President's budget or what is considered the "official program" cost.

--Costs are excluded from the estimates provided to the Congress by reporting less units than they actually intend to buy; excluding related costs, such as aircraft simulator and facility costs; and not considering many of the major contributors to cost growth such as system design changes, production rate changes, and funding perturbations.

--Program office estimates are often based on contractor estimates that are frequently overly optimistic.

--Independent cost estimates are often as inaccurate as the program office estimate they are supposed to verify.

TEST AND EVALUATION

I will now discuss the test and evaluation of major weapon systems. Test and evaluation is conducted throughout the acquisition process to identify and reduce development risks and to ensure that a weapon system will perform as intended. The results are used by DOD decisionmakers and the Congress in managing and overseeing the development and acquisition process. The increasing sophistication and capabilities of DOD's new weapon systems have made effective

testing even more critical to ensuring that weapons achieve specified performance levels.

Because of the importance of test and evaluation, GAO has conducted, beginning in the early 1970s, numerous reviews of DOD's test and evaluation process. Many changes and improvements have been effected, but there is always room for improvement. In addition, care must be taken that past gains are not lost. I would like to discuss three examples of our current assignments covering various aspects of test and evaluation. They are

--the adequacy of test resources in certain areas,

--the Army's use of test and evaluation data, and

--the effectiveness of DOD test and evaluation in relation to current acquisition initiatives.

In our review of test resources we examined, electronic warfare threat simulators and aerial targets. Although the services have made significant improvments in other test resource areas, such as range instrumentation, problems in planning, organization, priority and funding levels, and intelligence support have led to severe shortages in

electronic warfare threat simulators and aerial targets. These resources are critical to effective test and evaluation of the air defense systems of all three services. As a result of the shortages, DOD is fielding weapon systems without sufficient knowledge of their ability to survive in combat. Field commanders are operating weapons with unknown and perhaps dangerous limitations. This was underscored by the Secretary of Defense in his fiscal year 1984 report to the Congress. He cited the lack of an aerial target to represent the supersonic low-altitude and antiship missile threat for test and evaluation as a major problem area. Without a suitable target, weapon effectiveness in that area remains unknown.

We recognize that totally realistic operational environments cannot be achieved without going to war; our concern here is that tests be as realistic as possible. Without test resources that adequately replicate the threat, the true performance capabilities of weapon systems will not be proven and significant risks may go unexposed until deployment and actual use.

We are making several recommendations to the Secretary of Defense that will, if implemented, strengthen the quality and usefulness of test planning, overcome the organizational

issues, improve the priority and funding issues, and better identify the problems involved in providing adequate intelligence support to the test and evaluation community.

In our review of Army test and evaluation agencies, we are concentrating on how their contribution can be enhanced through more comprehensive operational evaluations. We are finding in our review that evaluators of test results are not adequately addressing the impact of fielding a system with the shortcomings found in testing. We believe that better integration and focus of the many Army test and analysis agencies could set the stage for providing adequate operational evaluators.

Finally, we plan to initiate an assignment concerning the effectiveness of current test and evaluation being performed on weapon systems in light of the recent DOD initiatives to improve the weapons acquisition process. Our concern is that required test and evaluation may be reduced because of the desire by DOD and others to shorten the time it takes for a weapon system to be developed, produced, and deployed.

REVIEW OF THE TRANSITION OF WEAPON SYSTEMS INTO PRODUCTION

In October 1981, the Comptroller General testified before this Committee on a report we had just completed on the procurement profiles of 14 major Army weapon systems. Our analysis showed a clear pattern of production cost increases in those systems in production long enough to deliver units to the field. We believe that the cost growth attendant to beginning production goes beyond cost estimating problems. Consequently, we have begun a DOD-wide review to identify the root causes behind production startup problems.

We are looking at six major weapon systems, two from each service--the Army's Black Hawk helicopter and Copperhead projectile, the Navy's HARM and Tomahawk missiles, and the Air Force's Air-Launched Cruise Missile and F-16 aircraft. We are getting early indications that production startup problems, such as high-labor hours, excessive rework, and longer machining times can, in large part, be traced to the adequacy of production planning efforts while the systems were still in development. It would seem that for systems to have a smoother transition into production, production planning must begin early in engineering development, producibility efforts must go beyond studies into actual hardware, and high-

technology processes and inspection equipment required by high-technology items must be developed in parallel with the end item. These factors become more critical when the technology involved is more complex and the contractors involved are less experienced.

Ultimately, we would like to be able to make specific recommendations directed at the basic problems associated with making the transition to production rather than at external symptoms such as cost growth and schedule slippage. We plan to complete the fieldwork on this review by the summer and hope to issue a report in early fall.

JOINT SYSTEM ACQUISITION

Mr. Chairman, you expressed interest in our review of joint system acquisitions by the military services in a letter to the Comptroller General last March.

Many joint programs have been directed by the Congress and the Secretary of Defense over the past 20 years or so (the services seldom get together on their own). The intent has been to curb duplicative systems by joint development, joint procurement, and joint logistics and support; in other words, collaboration through the entire acquisition process. The

idea is attractive but joint major system programs have been extremely difficult to carry out.

What the Congress and Defense Secretaries have wanted in ordering program mergers, we believe, is substantial commonality in fielded systems, reasonably satisfied participating services, and real visible savings.

Some successes in standardizing on component parts and in interservice buying of finished systems have been made. Notably, the Air Force was directed to buy the Navy's F-4 aircraft and the Sparrow and Sidewinder missiles, and these procurements worked out well. But our review of joint acquisitions, that is, joint development and procurement, has indicated no successes so far. Most eventually split up into single-service programs. There is no penalty if a service elects to drop out of a partnership.

The findings of our review, now nearly complete, parallel those mentioned in your letter to the Comptroller General. Some mergers have been ill-timed, or in retrospect, ill-chosen. The services are wary of joint ventures and their outcomes and are reluctant to participate. There are basic interservice differences which are difficult to overcome.

Each service with its individuality, traditions, and unique combat experience believes sincerely that its concept of a new aircraft or missile will be best for the Nation and mission and is strongly against compromise. There are also marked differences in service doctrine, operation, logistics, and procedures which tend to diversify system designs. Many of these interservice differences may be hard to fault individually. The trouble is that there is no "military court of appeals" to rule on conflicting doctrinal and requirements claims, or for that matter, to recommend diversity if that is the more prudent military course.

When joint acquisitions are ordered, the number one problem is getting agreement on joint requirements, especially difficult when doctrinal differences are high. Agreement is still more elusive when one of the systems is well into development with a "hardened" design, contracts in place, and a constituency formed. The second service can exert very little leverage for its more immature concept. Eventually, a service is likely to withdraw from such a venture.

We believe that joint programs can work out if (1) essential service doctrines will not be unduly compromised, (2) the programs are not too far down the development road at merger time, (3) military effectiveness will not be unduly lessened,

(4) the possibilities of savings are persuasive, and (5) there is conspicious support by the Congress, the Office of the Secretary of Defense, and the Joint Chiefs of Staff.

We also believe that there is a better likelihood for success under the following:

--One way to encourage the joint acquisition strategy would be to deny funds to services which seek to withdraw from approved joint programs and pursue their own individual designs.

--Another way would be to capitalize on productive interservice rivalry by encouraging the prospective service partners to compete their rival system concepts in early development and collaborate on completing the best choice.

DEFENSE ACQUISITION IMPROVEMENT PROGRAM

In 1981 DOD adopted a comprehensive plan to implement some 32 specific management initiatives directed toward reducing costs, stabilizing acquisition time, and improving the overall acquisition process. The January 1982 status

report on implementing the initiatives was excellent; however, the July 1982 report was not as comprehensive. Another report is planned for April or May 1983. DOD has stated that its efforts this year are directed toward working level implementation. We have been and will continue to monitor their progress.

I will discuss today two of the initiatives--efforts to amend Cost Accounting Standard 409 and multiyear contracting.

Initiative number 5 which encourages defense contractors to invest in capital assets and to increase productivity is of special concern to GAO. It sets forth eight actions, each of which is designed to provide increased profits and/or increased cash flow for defense contractors. Each of these suggested actions involves a significant element in the procurement system. We believe that it is necessary that each be more precisely defined before further work on implementing the actions is performed. This added definition is necessary to quantify what effect each proposed action might have on the defense budget. DOD's failure to quantify any of the eight recommended actions raises serious questions. We are especially concerned with the potential cost impact to the federal budget if all eight actions were to be implemented simultaneously.

Part of this initiative is to seek amendment or repeal of Cost Accounting Standard 409, "Depreciation of Tangible Capital Assets," to permit more rapid capital equipment depreciation and to recognize replacement depreciation costs. In testimony before your Committee on October 21, 1981, we expressed concerns regarding this initiative. After that time, we undertook a study to determine what the cost impact might be to the federal budget if it was implemented. The preliminary phase of our study has been completed. In that phase, we obtained actual depreciation data from seven contractor segments. It is estimated that if it is implemented fully as set forth in the document published by DOD on September 7, 1981, it could have a significant effect on the federal budget. Since conditions similar to those we examined at seven contractor segments exist at over 1,100 other contractor segments, the industry-wide effect of implementing this initiative could be prohibitive. To establish a defense industry-wide dollar impact, we are obtaining depreciation data from a large number of defense contractors. We believe this data will allow us to draw more definite conclusions as to the total effect implementing this part of initiative 5 could have on the federal budget.

Our preliminary studies of this area have confirmed the statements we have previously made to the Committee that Cost Accounting Standard 409 is closely interrelated to Cost Accounting Standard 414, "Cost of Money as an Element of the Cost of Facilities Capital," and the DOD profit policy. An amendment to Cost Accounting Standard 409, without corresponding review of these interrelated regulations and Cost Accounting Standards, should be avoided. GAO will continue to assess the cost impact of this initiative by considering related Cost Accounting Standards, procurement regulations, and DOD profit policy.

GAO has long maintained that multiyear contracting, initiative Number 3, can be a viable acquisition method for reducing defense procurement costs, and we encouraged passage of Public Law 97-86 which enhanced DOD's multiyear contracting authority. We believe that multiyear contracting could increase competition by allowing potential suppliers to write off up-front costs (e.g., start up, new equipment, etc.) over a larger production run, as well as provide a more stable business base from which more orderly production planning and execution could flow. Also, our studies of non major weapon system multiyear contracts showed that savings do in fact exist when multiyear contracting is combined with competition. We maintain, however, that multiyear contracting

for major weapon systems is a separate issue and have cautioned that DOD proceed slowly until we understand all of its subtleties.

We believe the $36 billion that DOD has thus far proposed to the Congress for major weapon system multiyear contracting is not consistent with our caution. For example, DOD's fiscal year 1984 request of about $23 billion for seven major weapon systems represents a four-fold increase over its fiscal year 1982 requests, the first year under the expanded authority. The first executed major weapon systems contract is only in the first year of its 3-year production period and the second proposed major fiscal year 1982 multiyear contract--for the F-16 aircraft--had not been signed when the fiscal year 1984 proposals were made.

GAO's April 29, and September 13, 1982, analyses of DOD's projects proposed for multiyear contracting in fiscal year 1983 raised a number of concerns about (1) the accuracy and validity of the cost savings estimates and whether savings are commensurate with risks, (2) the application of the criteria for identifying programs most suitable for multiyear contracting, and (3) the effects of multiyear contracting on DOD and overall government budgets and whether the Congress' budgeting flexibility is being unduly restricted due to the use of multiyear contracting.

One change in the enhanced authority, which has a significant impact on the claimed savings under multiyear contracting, is the opportunity for DOD contractors to buy materials and produce in economic order quantities. To achieve these savings, it is necessary to spend significant sums of money earlier under the multiyear contracts than would have been the case under annual contracts.

DOD claims the projected difference in total obligational authority required for annual contracts and the multiyear contract is a savings. We disagree. DOD's claimed total obligational savings does not reflect the cost of borrowing associated with accelerated expenditure of funds under multiyear contracting. This is not a DOD budget cost but it is a real cost to the government. The difference between expenditures under the multiyear and annual contract methods must be discounted to present value to determine the savings.

When GAO discounted the 11 proposed fiscal year 1983 multiyear contract candidates, DOD's claimed savings of $657.9 million, representing an 8.6 percent savings over annual contracting, was reduced to a potential savings of $177.8 million, or 2.3 percent. Another more difficult savings offset to quantify is the cost of deferred tax revenues for

those contractors using the completed contract method of accounting. This practice allows deferral of payment of Federal Income Taxes for longer periods of time under a multiyear contract than would be available under successive annual contracts. Quantification of the effect of deferred taxes would require specific knowledge of the contractors total business which is not readily available.

Another major issue we had with the fiscal year 1983 projected savings is that they were all based upon budgetary estimates and not firm contractor proposals. We believe that adequately evaluated contractor proposals under both contracting methods is the minimum required to achieve a reasonable level of confidence in projected savings.

DOD has been directed by the House Appropriations Committee, Subcommittee on Defense, to obtain cost proposals both on a multiyear contract basis and on an annual contract basis with option prices for successive years on quantities comparable to those in the multiyear proposal. We believe such data, objectively evaluated, would provide a reasonable basis for projecting savings. However, it would not disclose the offset to savings for lost Federal Income Tax revenues for multiyear contracts awarded to contractors using the completed contract method of accounting.

The fiscal year 1984 B-1B multiyear contract proposal is of particular concern because this is a concurrent development and production program. The first of the 100 planned weapon systems has yet to be delivered. In September 1982, we reported that the projected cost savings were based on a methodology we considered very unreliable, and that discounting had not been used to consider the time value of money. We also questioned whether two criteria of Public Law 97-86, design stability and degree of cost confidence, could be met since the B-1B weapon system is barely into production and firm contractor cost proposals on annual and multiyear contract basis had not been obtained. There has been high congressional interest in the B-1B weapon system and we recommend continued attention. GAO is in the process of obtaining from the Air Force the detailed support as to how the Air Force met the legislative criteria for the multibillion dollar proposal for the system's multiyear contracts.

We are also concerned that while we are focusing on the issue of the potential of individual candidates for multiyear contracting that we may loose sight of the cumulative inflexibility that is being built into outyear DOD expenditure budgets. Attachment II to this testimony displays the cumulative impact to future DOD expenditure budgets as a result of the multiyear procurement currently proposed by DOD.

We believe this should be emphasized because it is the expenditure budget that must be primarily looked at to curb deficits in the short run. If it becomes necessary to slow down or stretch out major weapon systems under a multiyear contract, it will reopen the terms and conditions of the contract and we are faced with a very complex restructuring of the contract for the convenience of the government. This may also be looked upon as the program stability issue. If expenditures must be cut, do we destabilize a few larger programs or many smaller ones? Multiyear contracts could exacerbate the decision.

GAO intends to closely monitor DOD's efforts to use multiyear contracting on major weapon systems and, at the request of the Chairmen, Subcommittee on Defense, House Appropriations Committee and Senate Appropriations Committee, is currently assessing the proposed fiscal year 1984 candidates and is conducting an in-depth case study of the Blackhawk helicopter airframe multiyear contract.

EXECUTIVE ORDER 12352

Before closing, I would like to discuss the most recent procurement reform initiative affecting DOD--Executive Order

12352, dated March 1982. It mandates that each agency (1) simplify the procurement process, (2) develop a professional work force, (3) increase competition, and (4) perhaps most important of all, strengthen management of the entire system. Except for one aspect of this Executive order, its implementation is still in the design stage. The one aspect which is supposed to be operational is the establishment in each agency of a Procurement Executive with the responsibilities and accountability for developing and operating agency procurement systems. While the Office of the Secretary of Defense did appoint such a Procurement Executive some eight months ago, it has not chartered this Executive with the responsibilities contained in the Executive order and in a model which the Office of Management and Budget suggested to agencies. As a consequence, neither that Office nor the military services have the management structure and responsibilities in place to effect the reforms or to be held accountable.

The effect of Executive Order 12352 is that each agency head has a presidential mandate to reform its procurement systems. The Executive order charges the Office of Management and Budget and the Office of Federal Procurement Policy jointly with the agency heads to provide the leadership, policy guidance, and coordination necessary to achieve this

reform. Formerly, senior procurement officials of the agencies were preoccupied with policy and regulatory-making duties and not overall system concerns, such as an overly complicated procurement process or an underdeveloped work force or limited competition. Under the Executive order, each agency head is expected to charter a Procurement Executive to deal with complete system responsibilities.

An interagency task group was charged with developing a Procurement Executive model charter. The charter identifies the appropriate placement of the Procurement Executives, sets out primary duties and responsibilities, and lists those system-level functions appropriate for delegation. The charter was reviewed by the executive committee on which DOD is represented and partioned. The Director, Office of Management and Budget, sent this model charter to the heads of the executive agencies requesting that it be adopted directly, or with modification, but stipulating that the agency's charter must remain consistent with the purpose and scope of the Executive order.

DOD responded to the Executive order with a June 30, 1982, letter to the Deputy Director, Office of Management and Budget, stating that the Under Secretary of Defense for Research and Engineering is the Procurement Executive for DOD.

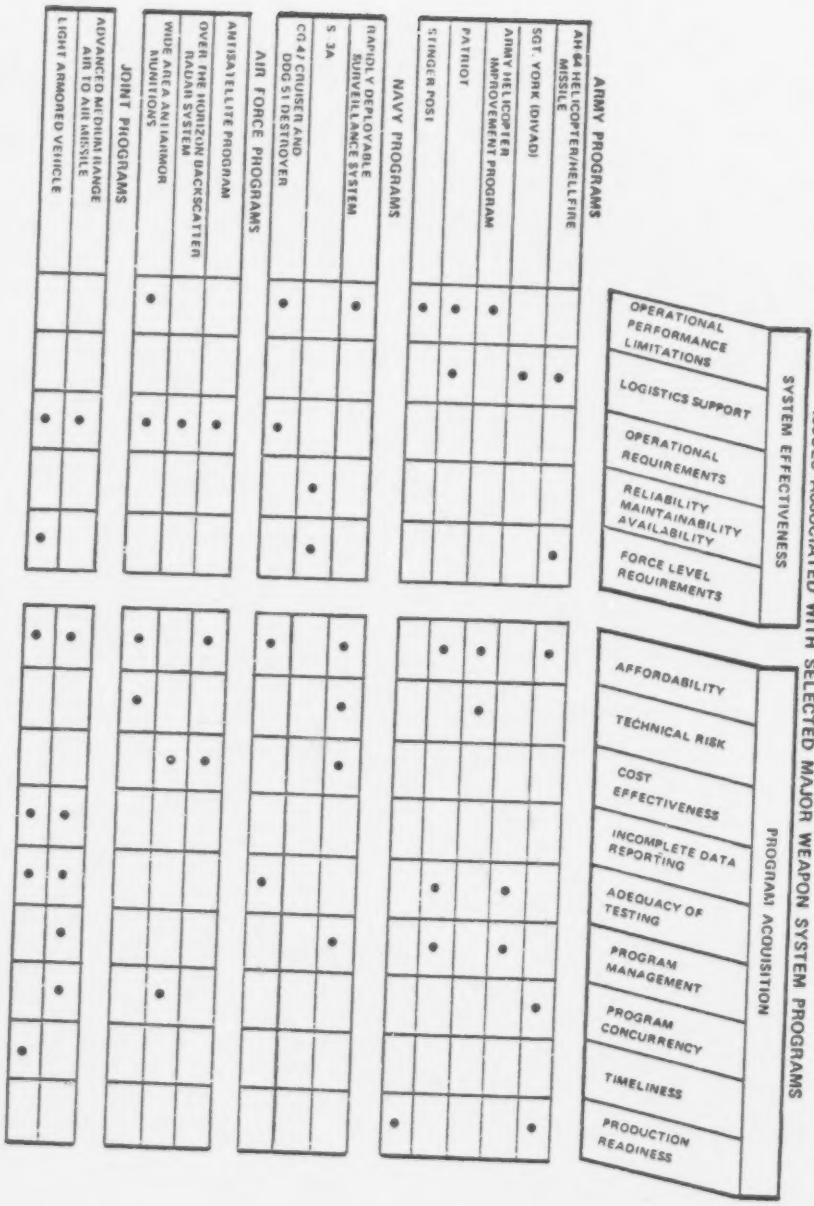
DOD's response to the model charter is that the responsibilities to be delegated to the Procurement Executive are included in existing DOD directives. However, the directives referred to by DOD were prepared for other purposes and do not contain the clear mandates of the Executive order or the responsibilities set forth in the model charter. We believe DOD should publish a comprehensive charter for its Procurement Executive so that his role and responsibilities will be clear to everyone.

Further, absent a clear charter containing the central features of the Executive Order's mandates, the Procurement Executive is a title without sustance.

Finally, a new DOD charter is required to simplify the delegation process. One key aspect of the Executive order and the model charter is that the authority and responsibility of the Procurement Executive at agency level be delegated to lower levels within the agency. The purpose of this is to achieve reforms at the lower levels in organizations where the operations take place and the real management is done. The present collection of "delegations" of authority to the DOD Procurement Executive do not lend themselves well to delegation to the lower levels. A new charter would be both an effective vehicle for providing a single focus for procurement authority, but also for the delegation of this authority and strengthening of procurement officials at operating levels.

Mr. Chairman, this concludes my prepared statement, I would be pleased to respond to any questions you or the other members of the Committee may have.

ATTACHMENT 1



BEST COPY AVAILABLE

ATTACHMENT II

ATTACHMENT II

CUMULATIVE IMPACT OF DOD'S PROPOSED MAJOR WEAPON SYSTEM MULTIYEAR CONTRACTS ON OUT-YEAR EXPENDITURE BUDGETS

Fiscal year	82	83	84	85	86	87	88	89	To complete
	(millions)								
1982	$548	$ 838	$ 1,144	$1,067	$ 834	$ 307	$ 211	$ 239	$ 75
1983	26	613	981	1,639	1,889	1,194	893	755	512
Cumulative	574	1,451	2,125	2,706	2,723	1,501	1,104	994	587
1984	-	314	1,902	3,829	5,169	5,261	3,446	1,639	1,005
Cumulative	$574	$1,765	$4,027	$6,535	$7,892	$6,762	$4,550	$2,633	$1,592

Source: FY 1984 DOD Justification Packages for Multiyear Candidates. FY 1982 and 1983 Multiyear Candidates' Expenditure Streams obtained at the August 4, 1982, House Appropriations Committee, Subcommittee on Defense Hearings.

GAO RESPONSES TO WRITTEN QUESTIONS SUBMITTED BY SENATOR ROTH

Question: How would you characterize DOD's operational testing in terms of accuracy and usefulness of results, and utilization of results? What are your feelings in regard to having an independent test organization for testing at the Secretary's level - independent of the program managers?

GAO Response: In developing weapon systems it is critical to assess program acquisition risks and to evaluate the ability of a weapon system to perform as intended. The purpose of the test and evaluation is to minimize uncertainties that would adversely affect system cost, schedule or performance.

Over the years GAO has reported on weapon system performance problems and raised questions about the capability of systems to perform their missions. We have noted many examples of where early developmental or the later operational tests were not comprehensive, rigorous or complete resulting in unnecessary risks during the acquisition process and after deployment. We have issued reports on operational testing done by each Service. Overall, we believe the quality of test and evaluation has improved significantly between the early 1970's and recent times. Most recently, however, we have been concerned that required test and evaluation may be reduced because of a desire by DOD and others to shorten the time it takes for a weapon system to be developed, produced and deployed. This need not happen, but it could become a reality depending upon exactly how the Services implement current policies.

Other current concerns we have involve the adequacy of test resources, the effectiveness of joint operational test and evaluation, and the use of test and evaluation data by decision-makers. We have also been concerned with the emphasis being given in testing to reliability, availability and maintainability considerations. Progress has been slow in these areas.

Historically, GAO has supported the use of independent test and evaluation activities. The independent test and evaluation organizations established in each Service during the early 1970s have done creditable work. They should function well in the future if sufficient resources and time is allocated for operational testing. We feel that the need for a new independent Office of Operational Testing at the Secretary's level has yet to be proven and that the many arguments both for and against such an office need to be explored. At this time we feel that there are many obstacles to it becoming law and believe it may be more fruitful to strengthen and enhance the quality of operational test and evaluation planning, conduct, and reporting performed by the existing independent test organizations.

QUESTION: Do we need to make major structural reforms to minimize interservice problems and encourage greater attention to multi-service and multi-mission problems.

GAO RESPONSE: There is always room for improvement. Roles and missions assignments and the function of the Joint Chiefs of Staff have been endlessly studied and criticized since the Key West agreement of 1947. Much has changed since then as the growth of technology has eroded traditional service boundaries. It may be time for a new look at the Defense organization. Actually, the Secretary of Defense has long had the power to make significant changes to the structure, scope and functions within DOD. He can authorize important added powers for the Chairman of the Joint Chiefs of Staff, for example; but he would be likely to want strong congressional support in doing so.

Reassigning service roles and missions or other such changes might require legislation. But in any event if a particular reform package appeals to the Secretary and the Congress, legislation would be fortifying and allow for an adequate trial run despite changes in administration.

QUESTION: Do you think the JCS needs to be reorganized and given more authority to help control the power of and the conflicts between the Services?

GAO RESPONSE: The consensus among many knowledgeable observers of defense affairs is that JCS reforms are needed, mainly to improve the quality of military advice to the President and the Secretary of Defense and to strengthen the role of the JCS (or a similar high level entity) in interservice matters.

Many suggestions have been made about changes in JCS functions, powers and organization. We are currently reviewing joint system acquisition by the services and our preliminary findings indicate that such acquisitions would be more successful if there were a supra-service military umpire or military "court of appeals" to settle joint requirements disputes. This could be a role for the JCS.

Conspicious support of joint acquisitions and interservice buying of finished products by such a high military authority would be a plus also.

QUESTION: Does DOD have a single mission area structure for managing resources and reducing overlapping or conflicting service roles and programs? Should it in your opinion?

GAO RESPONSE: An unequivocal response to this question is extremely difficult. That is, we believe that mission area management is the logical approach to managing resources. As such, we believe that a single mission area structure, or at least the ability to tie numerous mission structures into one structure, should exist. This structure would provide the framework under which all DOD activities and programs would fall, defense objectives would be defined, issues addressed, and programs assessed throughout DOD. The Secretary of Defense has told us that DOD does in fact have a single mission area structure, namely the Five Year Defense Plan (FYDP). Thus, on the surface the answer to each of your questions appears to be an unequivocal yes. However, as discussed in detail below, there are a lot of other factors which, when taken into consideration, tend to cloud the DOD's claim to the existence of a single mission area structure.

As stated previously, the General Accounting Office supports the mission area management concept. We also support the use of mission area analyses as part of mission area management because these analyses provide decisionmakers with information that is essential to the resource allocation process. Our support for this concept has been based on and endorsed by the Commission on Government Procurement in 1972, the Congressional Budget and Impoundment Act of 1974, OMB Circular A-109 in 1976, a GAO Report in 1977 on Mission Budgeting (PSAD-77-124, July 27, 1977) and by internal DOD studies.

In addition, in GAO reports to the Secretary of Defense on March 15, 1981, 1/ March 17, 1982, 2/ and November 5, 1982, 3/, we encourage much greater use of mission area analysis for identifying mission deficiencies and weapon systems needs. Also, in an April 7, 1983 letter to the Secretary of the Army, we complimented the Army on their progress in conducting mission area analyses. 4/

A very real problem encountered when discussing mission area management is the definition of the term "mission." As you know, the term "mission" can mean many things to many people. For example, on one end of the spectrum it can be used to refer to a mission of a particular weapon system or an individual DOD organizational unit. On the other hand the ten program categories that are used in DOD's budget submission to the Congress have also been referred to as "DOD's missions."

During our initial work in the mission management area, we had come to believe that there was no standard mission area structure within DOD. This belief was based on the existence of many different mission area structures. For example, each of the services has developed its own set of missions; the various components of the Office of the Secretary of Defense (e.g., USDR&E, MRA&L, PA&E, Comptroller) each has its own set of DOD "mission areas"; parts of the Defense Guidance are mission-oriented, but we have been told that the missions do not parallel the services' missions; and the FYDP mission categories are somewhat different from any of the other mission categories used within DOD.

1/ Improving the Weapon Systems Acquisition Process (GAO/MASAD-81-29).

2/ Review of the Impact of A-109 on Weapon Systems (GAO/MASAD-82-10).

3/ An Analysis of the Counterair Mission is Required to Help Ensure that the Air Force is Buying the Capabilities It Needs (GAO/MASAD-83-1).

4/ Mission Area Analyses Conducted By The Army Training and Doctrine Command (GAO/MASAD-83-20).

Although some of these variances are quite minimal, the existence of these different structures appears, in our opinion, to inhibit making consistent and complementary decisions concerning mission area capability needs and resource requirements. This would be especially true for areas that cross individual service responsibilities. This could be critical to the effective, efficient, and economical management of defense resources. It, therefore, seemed to us that sound financial management dictates the need for a standard mission structure within the DOD.

Consequently, on October 21, 1982, we sent a letter to the Secretary of Defense requesting that he provide us the DOD position on the need for a standard mission structure. In his January 5, 1983, response, the Secretary acknowledged the existence of the numerous mission area structures but described them as the unique way that the various DOD staff has broken down FYDP data for management purposes. He stated that, contrary to our impressions, DOD does in fact have a standard mission area structure for managing its resources. That structure is the Five Year Defense Plan. The Secretary said that the FYDP is the heart of DOD's Planning, Programming and Budgeting System, is mission-oriented, and continues to satisfactorily serve DOD's needs.

It is interesting to note, however, that during the same timeframe that the Secretary's January 5, 1983, response was being prepared and transmitted to us, the OSD Comptroller has contracted to define a standard set of missions for use through DOD. That effort would seem to contradict the Secretary's response to us.

In summary, based on our years of work in reviewing DOD programs, we have come to appreciate the usefulness of a single mission area structure for managing DOD resources. However, we have some problems accepting the Secretary's position that the FYDP constitutes such a structure. We know for example that the various DOD components do not analyze missions by the FYDP categories. The FYDP, in our view, is merely a <u>display</u> or <u>record of decisions already made</u> as a result of all the other analyses, military judgements, congressional impositions, etc., which come into play at various times throughout the entire PPBS.

Chairman ROTH. At this time I would like to call forward George Kuhn.

Mr. Kuhn, I want to welcome you here.

I have had the opportunity to read the report you prepared for the Heritage Foundation. I understand you do not represent them today but are here on your own behalf.

As I said earlier, one of the things that I would hope that the Pentagon understands is that there is a broad consensus that some basic reforms need to be adopted to become more effective. This includes not only doves but people who perhaps think that there should be more spending rather than less.

In that latter category, I certainly list your work.

I would ask you to proceed with your statement.

TESTIMONY OF GEORGE W. S. KUHN, INDEPENDENT CONSULTANT, WASHINGTON, D.C.

Mr. KUHN. Thank you, Mr. Chairman. I am sure I am here today primarily because I am a hawk who is critical. The report that I wrote has been likened by one of the major weeklies in the country to something like "the dead rat in the punch bowl." It disturbed a lot of people.

I think that hawks, people who are prodefense, if you want to use such terms, need to be critical and honest about the problems that the Defense Department faces and the Congress and the rest of us face in fielding effective combat forces.

My own view is that we face severe difficulties which, if they remain substantially unaddressed, will undermine our efforts to build up our military power.

If you go through just the three areas that I address in my chapter—which were force structure, readiness, and the balance of fighting capabilities in the field—you find little realistic promise of the kinds of decisive improvements officially forecast for our fighting forces.

There are slight increases in numbers of weapons and fighting units in certain categories. There are actually decreases in other categories of either weapons or fighting units.

If you look at readiness over the long term, while the projections in the Defense Department are going up—the expression is "the ramps are up"—if you look at how much they are spending on readiness versus how much they are spending on modernization programs, the prospect is that readiness will, in fact, go down. DOD is laying in more readiness burdens, through its procurement program than it is planning to support.

This is a very serious problem. Finally, I think there is a difficulty in the kinds of weaponry, the kinds of units and troops, et cetera—the kinds of combat capabilities—that we are actually putting into the field.

In the chapter, I try to outline some of those problems.

I base my analysis on the view that combat is comprised of both complex and simple field tasks. What is it that you can do in the field against the enemy that is relatively simple technologically to do, but very effective? And what other sorts of things can you do to

an enemy which are effective but also relatively difficult technologically?

Chairman ROTH. In other words, you do believe there is substance to the charge we buy goldplated, too complex weapons for a mission.

Mr. KUHN. There is no question about that; absolutely.

There are two parts to it: First, there is an imbalance of equipment to perform simple and complex tasks; second, this imbalance leads to unnecessarily high readiness problems. We try to build forces which rely from stem to stern on performing the more complex combat tasks in the field. We end up being unable to field enough forces of the right kind to succeed at the technologically simpler tasks.

The complex tasks require technologically very complex systems. I am talking, for example, about shooting down a maneuvering enemy aircraft at exceedingly long range—50 or 100 or more miles is what we are trying to do today. Or killing an enemy tank by friendly tank fire at ranges in excess of 3.5 kilometers.

Well, if you can do these things on those occasions when such opportunities are presented to you, that is fine, and you usually cannot do these tasks with relatively simple systems.

The problem is that you are not presented those opportunities often in combat. The kinds of opportunities that you are normally presented are the close-in kills of enemy aircraft or tanks. These tasks certainly require great skill and courage to perform, but they are relatively simple technologically speaking.

What we need, for example, is a lot more planes up there excellent at dogfighting. That requires increased numbers of fighters with superior aerodynamics, range, loiter time, combat speed between mach 1 and 2, and cannons and short range heat-seeking missiles. Advanced materials and methods permit us to field vastly improved fighters in more adequate numbers, so long as we don't try to make dogfight aircraft into long range interceptors, which require more complex and costly applications of the same advance technology. And we ought to weigh the mix of simple and complex aircraft toward the simple end.

We are not doing that. We sometimes keep a relatively steady balance between the complex equipment and the simpler equipment, but we normally weigh the mix toward the complex end. In my view, the forces need a far greater emphasis on accomplishing the more numerous and frequent simpler tasks. We could thereby build up the forces in terms of both relevant capabilities and numbers, and devote more adequate effort to the readiness of all the forces complex as well as simple.

Well, that is all laid out in the chapter, or I try to lay it out there. I think, just for the sake of brevity, I would like to make a few remarks about points raised here this morning, rather than deliver my prepared statement.

Chairman ROTH. Yes. Your statement will be included as if read.

Mr. KUHN. First of all, in my own look at the December 1982 SAR, which I got a couple of days ago, the statement that they are saving $18 billion is, in fact, wrong if they attribute all of that $18 billion to their own management improvement program.

If you look, as the committee began to do this morning, at the Trident, well, they are not saving money; they are simply shifting it to another accounting column. That is $11 billion. As a matter of fact, you will find the seven Trident II's cost more now than before.

If you look at the air launched cruise missile, they are not saving money there either. They are putting the program, as the expression goes, "in the black." It is going into a top secret account. We will not know how much money they are spending on that program in the future, but we know they are not going to save money as they change the missile's design and subsystems. That is another $4 billion.

Something no one pointed out this morning is that the Copperhead shell for the Army was killed by Congress last year, and DOD is claiming a $900 million or a $1 billion savings on that. Well, that is not due to DOD action at all. It is due to Congress. In fact, if you look at what the Army or DOD has done, it has stretched the program, and I would assume the reason for that stretch for the remaining buy is they want, in fact, to bring that program back to life.

I predict you will see Copperhead again.

If you add up just these three programs—Trident, ALCM, and Copperhead—the claimed $18 billion savings reduces to less than $2 billion.

I then looked at the new SAR in a little bit more detail. I looked at the difference between what DOD is now reporting for fiscal year 1984—in December 1982—versus what they projected last year, 1 year ago, they would be buying this year. I looked at the quantity and the cost figures for the 40 systems which had been in the SAR as of September.

I found that only three of those systems have experienced quantity increases in fiscal year 1984 over what DOD had projected last year they were going to buy in fiscal year 1984. On the other hand, there has been a quantity decrease in 21 programs, DOD has held steady in 13 programs, and in 3 I cannot tell.

So of the 40 programs, 21 are a decreased buy in 1984 over what DOD projected in fiscal year 1983 they were going to buy in fiscal year 1984. Three are increased, thirteen are steady, and three are unknown.

Now if you look at each of these programs in terms of the unit cost—again, what they are actually requesting now to spend on those programs in fiscal year 1984 versus what they had planned a year ago to spend in fiscal year 1984 on those programs—you learn some interesting things.

Taking the three programs where you had the quantity increase, all three of those experience a unit cost decrease. That is fine. That is what we want to see and, indeed, expect to see when quantity increases.

Of the 21 systems where they are showing a decrease in quantity, 16 of those increased in unit cost. Two decreased, and three, I don't know.

Of the 13 systems that are steady in quantity, 5 increased in unit cost over what DOD projected last year; 6 decreased, and 2 of them I am not sure of.

So, overall, I must join the previous witnesses from the GAO in saying that I am a little dubious of the representation DOD made this morning about its management program. The claim was made that program stretchouts are a thing of the past, yet over half the programs in previous SAR's are shown to be stretched by the December 1982 SAR. The claim was made that cost growth is being tamed, yet the claimed $18 billion savings is at best less than $2 billion. And twice as many SAR programs experienced fiscal year 1984 unit cost increases as experienced cost decreases—21 versus 11—over last year's projections for fiscal year 1984.

I would like to address, then, three points following these particular remarks. First of all, cost growth. Where does it come from? What is it? I think there was a great deal of confusion about that this morning back and forth, and I would refer you to page 11 of my prepared testimony. There is a graph that I have put together on the Hellfire missile showing what the total program cost was projected to be in 1975, when the program was activated at the DSARC II stages versus what the projected total program cost was in June 1982, and where the difference came.

If you look on the left-hand bar, you see that the lower block, 100, designates the real dollar cost of the program. The 45 represents how much of the program total—of 145—was going to be due to inflation.[1]

That is what they projected in 1975. In June 1982, the 100 remained the same, the same real dollar cost to the basic program. But they also projected that inflation on that basic program would be 85, not 45. But the key cost growth—the growth that really kills program budgets—is in unplanned program changes. Whereas increased inflation on the basic program resulted in an extra 40 points beyond the 45 for inflation predicted in 1975, the net effect of unplanned program changes—in quantity, design, support needs, cost reestimates, and so on—was an additional 217 points on top of the original total program projection of 145.

What that translates into is massive program instability.

So I would say that the key to poor DOD projections of cost is that DOD does not figure, in its initial program cost projections, that programs are going to undergo substantial changes that are not planned at the point in time when the program is added to the DOD's acquisition agenda. That is the origin of our seeming inability to project realistically what the cost of the program will be.

Chairman ROTH. In other words, you are saying that program changes of the various types you enumerated is the principal factor, perhaps, in cost growth.

Mr. KUHN. It is the principal factor. You will note that there has been an increase in inflation—45 was projected originally; 85 is what they projected 7 years later.

Well, that is an increase which must be paid for, but I suspect the defense budget of the country could afford that.

What the budget cannot afford is the fact that we completely disregard the possibility of the extra 217 points above that.

Chairman ROTH. Let me ask you this question:

[1] See p. 145.

Are program changes resulting from the fact that they go into production too early, or is it a fact of life that we have to face with any new weapon because you're on the cutting edge of technology? Should there be built into each program some cost increases? The costs of these programs are actually almost doubling. That is not quite accurate, but there is an increase of 80 percent on average of each program.

The initial real dollar cost was a 100, the additional real dollar cost because of program changes is 81.

Is that fairly low or high?

Mr. KUHN. This is probably either average or low. If you go through the table that I developed for 28 weapons systems in production as of June last year—and I think that all of those systems are still in production—this Hellfire program is no worse than most of the others and, in fact, it is better than many of them.

Chairman ROTH. Let me ask you this, then:

Can that be avoided, or should they be doubling their initial estimate of cost because of experience?

Mr. KUHN. I don't think it can be avoided altogether. I think, again, the previous witness from GAO alluded to this. We have enormous optimism built into the cost estimates that the Defense Department sends over to the Congress. They assume that the program, as they lay it out and as they cost it out, is not going to change.

I have been told that DOD often allows about 3 to 7 percent of their total projected program cost for uncertainty, that is, for unscheduled or unplanned program changes.

Well, this one chart suggests that that 3 to 7 percent is absolutely overwhelmed by the realities of program changes. Some of these changes are unavoidable—for example, technical difficulties they didn't project, or labor difficulties they didn't project, or inflation, or whatever.

But other significant programs changes are quite conscious. They increase or decrease the quantity. That is a conscious decision. They change the design of the program or they try to add more capabilities.

The point that I would make is that if you look at every single system in the SAR, they all are subject to these enormous program cost increases due to program changes.

Those program changes, by definition, cannot be predicted precisely. But I think it is quite reasonable for the Congress to expect that when DOD comes over here and testifies on the cost of a new proposed program, that it inform Congress—and one of your colleagues was getting to this earlier this morning—that its cost projection assumes no changes. DOD should say, "We believe that the program is going to cost x and that is our best guess, but that assumes no changes. However, based on the experience of other programs of a similar technical character, they ended up in fact costing an average of so-and-so percent more than originally projected, due to program changes." Congress ought to be told that so it can check whether DOD has too many optimistically costed programs plugged into its projected procurement budget.

Chairman ROTH. If you look at the projections of cost over the next 5 years, what kind of impact would that have on the Defense budget over that period?

Do you have any figures or analysis of that?

Mr. KUHN. I haven't done that analysis; no. I understand there has been discussion in the Budget and Armed Services Committees, however, that past cost growth trends suggest the DOD procurement budget may be understated by about 30 percent. Likewise, a recent major Air Force study entitled "A^3"—Affordable Acquisition Approach—states the AF investment account may be understated by 23 percent. So the budget impact is quite considerable.

But the kind of caution I am suggesting is needed in the decision-making process does not seem to be there. There is overwhelming optimism that a program will not change and it is going to cost thus and so. In fact, all programs change. The Congress dictates changes at times. The economy dictates changes. The threat dictates changes. Production lines dictate change. These things happen, and it seems most unrealistic for DOD planners to discount those changes at the front end of the program.

I think Congress needs to be informed as to what the experience of, as I say, similar systems has been in the past so that they have a better sense as to what the total budget might, in fact, be for any given program.

I believe that that should be required as a part of the submission from DOD. That is one of the suggestions I make in my prepared statement.

The second point I would like to address concerns the effect of this cost growth. I would refer you to page 5 of the prepared testimony where I have taken a chart out of Mr. Spinney's most recent analysis.[1] He shows the number of Air Force aircraft actually procured in the years fiscal year 1951 and 1956 and compares those to the numbers of Air Force aircraft that were projected as of last year sometime to be procured in the years fiscal year 1983 and 1986.

The reason he chose those 2 years as comparisons was because if you look at the constant dollar costs of those two groups of fiqures, they are about equal.

Well, you can see that there is just an enormous decline in the number of aircraft that the Air Force is projecting it will buy today versus what it was able to buy for the same price 30 years ago. This chart, in some circles in the Pentagon, has been called the pimple chart. The reason for that is that the little tiny nub on the right hand side represents all that the Reagan administration, with its substantial increased spending projections, is able to buy in this category of Air Force aircraft.

That is just a startling decline in numbers of planes affordable for the same budget in constant dollars. I would further refer to a remark that you made to a previous witness about the suggestion making its rounds through the Congress now that perhaps NAT0 as a whole ought to buy weapons together, the point being to get the production up. Well, of course we all want to get production up. But I have to stand back for a moment and reflect on the fact that

[1] See p. 139.

the United States is an enormous country. The last I heard, we had 230 million people and a $3 trillion economy. We have got a lot of resources, and yet we are thinking now, because of this cost growth problem, of reaching out to our friends in NATO for what amounts to economic assistance. We may soon say, "Please help us and we will help you—because they are faced with the same problem over there—get over this cost problem. We cannot afford enough production."

In my opinion, the problem is clearly one of cost growth. The question ultimately hinges on whether we need the kinds of complex systems at the expense that the various departments are, in fact, buying them.

Chairman ROTH. On that point, concerning the question of cost, does it not, however, also make sense for the allies, the alliance, to have common weapons and common systems and common communications?

Mr. KUHN. Sure. Militarily speaking, it makes a great deal of sense. I have no doubt about that, and I do not question that. But I suspect the reason for this inquiry into the possibility of coproduction of common weapons systems is driven much more by the difficulties of cost that we all face in our own individual national procurements than by the need for interoperable weapons.

I mean, people have spoken about the need for interoperable capabilities for 30 years in NATO. I think the problem right now is that cost is driving us, it seems, to a much more serious contemplation of buying common weapons because that is the only way we can afford to buy them. I suggest to you that if things continue to go the way they are going—that is, if costs continue to increase so steeply—it will be only another 10 or 15 years, when NATO itself could not afford to buy enough weapons.

Chairman ROTH. I must say that I think the viability of NATO depends upon the capability of our getting together because of the great cost.

Mr. KUHN. That may well be. I would respond, however, by saying that it should therefore be the clear interest of all NATO members, to attack the problem of cost. That gets us right back to the character of weapons. On the one hand, should they cost as much as they now cost? Second, do we need the particular kinds of weapons in the mixes that are now being proposed? As I said at the outset, the question largely boils down to what the mix should be of complex, costly systems versus simpler, less expensive systems. I agree with these who say that we can put the same advanced technology to work in different weapons—some of complex design, others simple—and be better off than we are today by far.

As to what to do about cost growth, I have made a couple of recommendations in my prepared statement. On the front end, as I noted just a moment ago, I think that the Congress needs to know—in fact, DOD itself needs to be apprised of—what the cost growth experience of weapons systems of similar technical and functional character has been in the past; say, in a contemporaneous period of time over the last 5 or 10 years. They need to have that information when they make their decisions on the front end about proceeding along with a new program.

Right now, we do not have that information. In fact, the Defense Department apparently intends to dismiss that kind of analysis by saying, "Well, that fellow is just looking at history, he is not looking at us." Of course, my response would be, "Well, those fellows are simply being overly optimistic again, and are not learning their lessons."

The second specific point I would make is that the Congress needs to have a sense of overall context when it makes decisions every year on the various weapons programs. That sense of context, it seems to me, can only be gained when the Congress knows what the DOD's past plans were for those programs versus what its current plans are. There is only one source for that information, and that is the group of quantity and cost projections made in prior years for a series of outyears. The 5-year defense program, or FYDP, includes 5-year projections of what DOD intends to buy in each of the 5 years and how much they think it is going to cost in each of those 5 years.

The only way to gain an overall context is to see whether DOD is achieving its plans. One must compare DOD's annual requests for quantity and cost per program to what it projected for each program in prior years.

Well, Congress does not now know that context. Each year, Congress is simply told by the Pentagon, "this year and next year, we intend to buy the following for so-and-so cost." Until the Congress is able to compare that current plan to previous plans covering the same years, it seems Congress will not be able to make adequate judgments as to the quality of defense programing and decisionmaking.

So my specific recommendation is that the Congress mandate that it be given not the 5-year defense program, which is a classified document, but the quantity and cost projections extracted out of that document, which are, in most programs, unclassified; and that they be given that information on a yearly basis. I bet you will find, even though you had this testimony this morning to a contrary, that 2 and 3 and 4 years from now, the costs will be considerably higher than DOD now projects; and second, that the quantities in DOD's actual annual requests will be considerable lower in many cases than they now project to buy.

I can illustrate my point by showing figures, which I have included in my statement, for the Navy shipbuilding program. It has already happened. Secretary Lehmen is an extremely impressive presenter of information. He claims to have already licked the problem of the 600-ship Navy.

Yet if you look at his 1984 to 1988 projection of ship buying for new construction, it is reduced by 21 major vessels from what he projected just 1 year ago that he would buy in the overlapping period of years from fiscal year 1984 through fiscal year 1987.

The Navy's plans are being eaten up by the double-edged sword of over-optimism: about future costs and about the size of future budgets. This is the nub of what has undermined our defense plans for decades. Little, if anything, has changed with the new administration.

The other end of the program cost control, I think, is to control costs—not just better estimate costs at the front end—but to con-

trol them. It seems there are just two methods to do that: One, by auditing programs to make sure that they are a fair price; and two, by market price competition.

Secretary Thayer mentioned a certain method of auditing called the should-cost approach. That was a method quite widely discussed and sometimes acually used about 12 to 15 years ago, and I suggest that it is still a very good method—if properly conducted.

Chairman ROTH. What did they call it again?

Mr. KUHN. It is the "should-cost" approach to costing. There are basically two approaches to costing: One is the "will-cost" and one is the "should-cost."

Chairman ROTH. Should-cost; all right.

Mr. KUHN. Should-costing is when you go into a detailed industrial engineering analysis of how much it should cost to produce a certain item. You have to get down to the nitty-gritty, the nuts and bolts: How long does it take to solder this joint, and how long does it take to do this or that. But that kind of analysis is prospectively possible. It is done all the time in civilian industry.

You get what they call a standard labor hour; how much should be produced in 1 hour by average production workers. Well, I have been informed by some eminent cost analysts in the Pentagon that in many cases, in our defense industry—and this is both in the major weapons programs and the spare parts programs and sub assembly programs—the efficiency of our production lines is terrible. Some lines require anywhere from 2 or 3 times longer, up to 20 or more times longer, to produce something than the contractor himself projects should be necessary. Well, a rigorous should-cost audit would get down to the production line level and ferret out those facts. I think that is a very good approach. I specifically recommend in my statement that Congress mandate that the GAO set up a major should-cost team to go out and look at the various programs and see if, in fact, they are overpriced for what we are getting. DOD and the services also ought to institute such terms using this pricing approach. As I say, the method has been used in the past in DOD and the services for particular programs, and used successfully.

But by far the more important way of controlling costs is what, again, was referred to this morning, and that is competition; the market; the forces of the free market. It has to be, I think, thoroughgoing competition, not pseudocompetition. By thorough-going, I mean sealed bids submitted on a program on a continuing basis, not just one time and then the winner of that——

Chairman ROTH. Winner take all.

Mr. KUHN. Yes, winner take all, and then forever more he is the sole source. We should not fool ourselves and call programs "competitive" which had either one price competition or design competition at one point in time. We should not call those competitive programs because they are not. They involved competitions at one point, and thereafter, they do not.

Chairman ROTH. I think one of the most discouraging aspects of military procurement is what happened in the seventies. Competition went down 10 percent, I believe. There is no question in my mind that bona fide competition is probably the most effective means of reducing costs.

Please proceed.

Mr. KUHN. In preparing the statement, I went back—frankly, I was not familiar with the figures—and looked at DOD figures for formal advertising as a percentage of the total DOD acquisition budget.

I found that in fiscal year 1954, it constituted 14.2 percent. I have got it listed from then on through fiscal year 1969; it was down to 11 percent in fiscal year 1969.

In fiscal year 1981, it was done down to less than 6 percent. We are getting worse in this regard; we are not getting better.

I think that this particular committee could do a great deal if it were to mandate legislatively that the DOD must increase its amount of sealed bid-type competition—continuous alternative sourcing by sealed bid a few percentage points a year. Mandating a steady increase of a few points annually would permit a very significant improvement in cost control.

We need to get back up at least to the level we achieved in 1954, and I would suggest we must get considerably above that if we are to have a healthy market system in the defense industry.

The final point I would make is this: You can reduce all these matters to the question of setting priorities and effectively managing, to achieve those priorities. My own view is that, in fact, we are neither setting adequate priorities, nor managing our affairs effectively in light of those priorities we do set.

Everyone, every particular service—and each subsector of those services—has its own agenda. They are all competing furiously for the available funds. It seems that the top level management is unable either in the services or at the OSD level, to make the very hard decisions, based on budget or based on performance of weapon systems, to cut marginal or poor systems so the remaining priority systems are adequately funded.

They are not making those decisions. Everyone pays some lip service, it seems to me, to the need to do that, to prioritize and make these hard decisions. But I just don't see it happening.

They will come over and say they have cut, say, 120 programs, but if you look at the 120 program list, almost all of it is very, very small pototoes propositions.

Chairman ROTH. What kind of dollar amount are you talking about, do you know?

Mr. KUHN. I don't know precisely. I have seen one list, provided I think by the Navy on some programs they had cut. It was about, oh, 60 or 70 programs. If you look down the list, most of the programs ranged from a few million dollars to several tens of millions of dollars. But the sum total of cuts hardly dents the Navy's cost growth problems for its major systems, let alone for its entire procurement list.

Chairman ROTH. If I understand the thrust of your statement, you really sort of believe right now they are involved in getting what they can while the getting is good; is that right?

Mr. KUHN. I think that is right. It is a feeding frenzy.

Chairman ROTH. Let me ask you one further question.

One of the initiatives has been to delegate more responsibility to the services.

Do you think that tends to increase that characteristic of over procurement, or do you think it would be better to move in the other direction and have more centralized policymaking?

Mr. KUHN. I hate to sit here today and support a centralized structure, because my own inclinations are precisely in the opposite direction. I think decentralization is the most important thing.

Chairman ROTH. How do you control this, then?

Mr. KUHN. That is the problem. I will just have to report to you what I have been told by various people at the Pentagon who have observed the process. They will point out that Secretary Weinberger arrived 2 years ago, and his top priority was readiness. He stated that publicly. He still states it publicly. But he was also committed to a management approach which was to decentralize decisionmaking.

He therefore significantly increased the say of services in major weapons programs and such decisions. The result, as I have been told, is that the modernization program is what is taking the lead, not readiness.

If you look at the projected budget increases in the acquisition account on one hand, the procurement account, versus the operations and maintenance account on the other, money is being put toward acquisition, not toward readiness. Yet, the Secretary's own permanent priority was readiness.

So that is the result, in a sense, of that decentralization of power. The services are following their own leads at this point.

Chairman ROTH. One of my concerns is that there seems to be many areas where a common procurement could be made. Because of the fact that the individual services are responsible for their own procurement, however, each ordering what they specifically want, when something more basic would fit the needs of all, there are few joint programs.

I think there is a serious need to get as much of DOD's procurement for all services to be unified because, again, economy of size is one way of getting some efficiency and some savings and some stability.

Mr. KUHN. I cannot disagree with anything that you have said, and yet I must again reflect on the fundamental point that conpetition is not only the American way, but it is a very effective approach to——

Chairman ROTH. I don't want competition between the services. I mean, I don't think in every instance, they all have to buy a different, for example, a different plane. But there are those who claim that we have got really four services, and each of them is buying everything on its own. They have got their own air force; they have got their own manpower; they have got everything on a separate basis.

I think that is one of the things we are going to have to look at, the basic structure. We are really going to have to make some major reforms. For example, does it make sense for each service to have its own hospital care? I mean, can medical service somehow be unified? The same thing with respect to communications. Should the Navy be able to communicate with the Army? Doesn't it make some sense maybe to have some common ground?

I don't know if that is the case today, but these are some questions that have to be addressed. I am very concerned about the exploding cost of defense and its impact on the economy. We didn't today get into the problem of what I call institutional reform, but I am concerned about that.

Mr. KUHN. It seems to me there is destructive competition like the kind you have just described quite correctly, and there is constructive competition.

I think in those institutional reforms that you are speaking of, we have to institute constructive competition between the services for missions, for hardware, for tactical approaches to combat threats and such, and, yet, we have to structure that reform in a way where we don't get back to this destructive competition, which is the kind that you were describing.

If we want a good close combat air-to-air fighter, why do we have to have one for the Navy and a different one for the Air Force?

Chairman ROTH. Correct.

Mr. KUHN. We agree that doesn't make much sense. One of the best suggestions that I have heard in the recent past is that we have a very large —it amounts to a natural—institutional split between the active services, on the one hand, and the Reserves and National Guard. They are essentially two different groups of people, institutions, et cetera. This split provides a very nice way to set up constructive competition.

We might do well to focus much more and different effort on the National Guard and Reserves. They potentially constitute a healthy, independent source of ideas on, for example, better ways to structure and train our units, better equipment designs, and even better tactics.

In the case of weapon design, you want eventually to get one weapon out of a design competition. But the Guard and Reserves form an institutional fact of life that could, if properly utilized, work to our benefit. We need to tap that resource. It sounds, I realize, like it could introduce an enormous and colossal confusion. If it is done badly it would just add to the kind of destructive competition that you are speaking of.

But I think it could be done correctly, and I think it is worth investigating further.

Chairman ROTH. I must say with respect to the National Guard and the Reserves, I would hope that they might help provide part of the answer to the escalating manpower costs, and you have raised a point that I must say, at first blush, gives me some concern. I think we have got too much destructive competition between the services.

But I am going to have to draw the hearings to a close today. I understand you may be making further analyses of the SAR that was issued yesterday.

I would very much appreciate it, if you would, letting us have the use of your comments in this area.

Mr. KUHN. I would be happy to.

Chairman ROTH. I want to thank you for your very thought provoking testimony and article. One of the things I think it is important for the Pentagon to appreciate—and I feel that is underappre-

ciated—is that there are a lot of thoughtful critics that are trying to be constructive and helpful.

Sometimes I think there is some stonewalling over there if you don't go along with what they say.

I look forward to working with you further.

Mr. KUHN. Thank you, sir.

Chairman ROTH. Thank you.

[Mr. Kuhn's prepared statement follows:]

PREPARED STATEMENT OF GEORGE W. S. KUHN

Thank you, Mr. Chairman. I appreciate your invitation to address the Committee.

I am deeply disturbed by what I believe is this nation's inability today to fight and defeat a determined conventional threat against our vital interests by a first class military power. I would be less disturbed if today's unpreparedness were a temporary lapse in an otherwise reassuring record of credible conventional readiness, or if decidedly better prepared military forces were in the offing in the foreseeable future. The fact is we have been unprepared conventionally for over 30 years, and I see no truly decisive improvements in fighting power on the horizon. Without question, there is enormous activity in the defense area, and a constant flux in the forces. But in my view we have precious little to show for all the activity relative to the unceasing promises that things will be more or less well one day. We have heard those promises for years. That day never comes.

Our problems stem from two sources. Conceptually, we have largely miscontrued the character of war, the kinds of tasks and qualities needed to wage war successfully, and the consequent requirements for our people, tactics, and hardware. Today our forces are too small, their readiness and sustainability are dangerously low, and their fighting capabilities are imbalanced. To the extent these deficiencies are due to approaches to warfighting, their consideration is more appropriate to other forums.

The other source of these problems, however is structural in nature. Whatever answers are given to questions about war and the kinds of forces needed to win wars, the nation must maintain structures and

BEST COPY AVAILABLE

practices that enable us to build those forces. The Governmental Affairs Committee can act in several respects to improve these structural arrangements. I will try to outline three this morning: budgeting and programming; procurement; and hardware testing. The particular recommendations I will offer address the problems of better cost estimation and control, thoroughgoing competition, and rigorous operational testing.

The keynote to all structural concerns is the ability, or not, to achieve plans. One need not posit a perfect world to suggest that if plans for improvements are consistently and significantly unmet, something is fundamentally wrong. The Defense Department's most authoritative planning document -- the only document that depicts DOD's decisions and plans for its programs -- is the Five Year Defense Program, or "FYDP." The salient fact about any given FYDP is that almost invariably its projections about the outyears -- especially the 3rd, 4th, and 5th years -- do not come to pass. Projected annual quantities are not reached, and costs soar higher than predicted and budgeted for.

A major problem for Congress and the public in their attempt to understand what is happening in defense is that we have very little opportunity to judge the progress (or shortfalls) in DOD's plans. The 5-year projections of quantity to be bought and costs, which are unclassified in most instances, are not made available to us. A healthy development in this respect was the demand by Congress in the mid-1970s to see the Navy's 5-year shipbuilding plans. Members finally realized they could not make sense of annual budget, authorization, and appropriation actions in the absence of a perspective on the fleet their decisions were shaping.

Here is the sequence of annual 5-year shipbuilding plans (without, unfortunately, associated cost projections) since FY74.

Shipbuilding Plans Versus Actual Requests
(New Construction)

	Fiscal Year														TOTAL
FYDP	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88 PLAN
FY74	15	33	41	39	29										157
FY75		31	39	39	25	24									158
FY76			23	29	32	26	20								130
FY77				16	30	19	25	31							111
FY78					22	29	37	36	32						156
FY79						15	15	17	12	11					70
FY80							15	17	11	12	12				67
FY81								17	19	17	21	23			97
FY82									14*	9	19	18	20		80
FY83										18	21	24	32	38	133
FY84											17	21	28	28	30 124

*Increased to 18 after Reagan's inauguration.

Likewise, the DOD's projected average unit costs for tactical fighters (both USAF and USN/MC) since FY76 has just recently been made available in a superb study of FYDP performance -- entitled "The Plans/ Reality Mismatch" -- by a Pentagon analyst, Mr. Franklin C. Spinney.

Dynamics of the Future Years

	Planned Future Year Average Unit Cost (Const 83 $)										
FYDP	77	78	79	80	81	82	83	84	85	86	87
FY 76-80	12.7	10.8	11.9	14.8							
77-81		14.4	13.4	12.3	14.1						
78-82			16.2	14.9	16.5	13.4					
79-83				14.5	15.8	15.4	14.9				
80-84					15.4	16.7	15.4	14.0			
81-85						18.9	15.9	12.7	12.0		
82-86							23.8	21.0	19.1	17.4	
83-87								23.8	23.6	20.6	20.6

"Future Year" = last four years of FYDP

BEST COPY AVAILABLE

Two points are quite clear: quantities actually requested during the year when it was time to pay the bills were almost always considerably below what had been planned previously for that year; and costs were almost always considerably higher than had been foreseen. The more correct description is to reverse that order. Costs typically increased beyond expectations -- and beyond budget allowances, whether high or low -- with the result that fewer items could be afforded than were planned.

I believe that, contrary to claims otherwise, this mismatch persists today. I offer the following table I put together last fall showing the results of just such a mismatch on the early Reagan programs.

Reagan Increase (Decrease) Over Carter

Program	*Actual Quantity Procured* FY81-FY82 Total	*Quantity Procured Compared to Carter's FY80 FYDP* FY81-FY82 Total	FY81-FY83 Total
M-1 tank	305	(348)	(526)
Patriot missile	46	(278)	(543)
Fighting vehicles	236	0	0
5-ton truck	2947	3970	7306
Copperhead shell	(854)	(9325)	(11,696)*
Trident submarine	(1)	(1)	(1)
SSN-688 submarine	1	2	3
CG-47 cruiser	1	1	1
F-18 fighter/attack	12	(21)	(45)
F-15 fighter	6	(12)	27
F-16 fighter	24	(60)	(120)
Air-launched cruise missile	0	(40)	(80)

*Amount assumes Reagan FY83 request though the program was canceled by Congress in FY83.

Sources: FYDP and FY81-82 figures from "Defense Budget Increases: How Well Are They Planned and Spent?" (GAO, April 1982); FY83 figures from the conference report on the FY83 defense authorization bill.

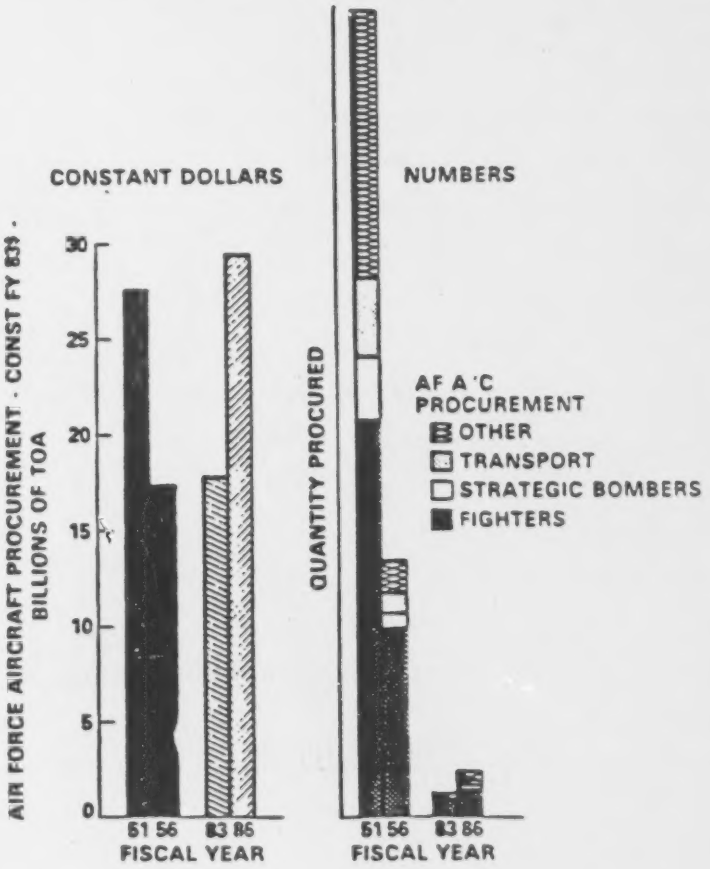
The problem of cost lies at the heart of our seeming inability to to enlarge and improve our forces. The cost problem exists on two planes. There is what might be called the static fact that the per-unit cost of

BEST COPY AVAILABLE

hardware today (whether for aircraft, missiles, tanks, ships, or other) is many times greater than comparable costs, say, thirty years ago. Everyone knows this, but the magnitude of the fact can be startling.

The following chart taken from the Spinney report shows the number of

LONG TERM DYNAMIC:
COST GROWTH, SLOWER MODERNIZATION,
SHRINKING FORCES



Air Force aircraft actually procured in the years FY51 and FY56 compared to the number expected to be procured in FY83 and FY86. These years were chosen because of the nearly identical constant dollar sizes of the procurement budgets in FY51 and FY86, on the one hand, and in FY56 and FY83, on the other.

You can see the enormous decline in the number of planes we can afford today for the same money as we paid in the '50s. I understand this chart has come to be called in some Pentagon circles "the pimple chart," since the quantities projected in both FY83 and FY86 look about like a pimple compared to the FY51 and FY56 figures.

It goes without saying that the relative capabilities of aircraft today versus those of the '50s are not depicted. What is indicated is the basic cause of our force structure decline over the years, and much of the reason why it is becoming increasingly difficult to enlarge the forces with even considerable real dollar increases in the defense budget. For example, the Air Force increased its budget for its tactical air forces by an annual average of over 10% in <u>real</u> terms in the years FY73 to FY80. Yet its fighter/attack inventory increased by only about 200 planes -- and this was due to high production rates of the two relatively low-cost aircraft, the A-10 and F-16.

The other, more insidious, aspect of the cost problem is what might be called the dynamic fact of cost growth. No matter what the estimates of costs have been, costs historically have lept beyond those estimates. Obviously, they have at the same time lept beyond budget levels, which are premised on the cost estimates. It is equally clear that cost growth has led

over time to the high per-unit costs described a moment ago.

In other words, cost growth explains two of our fundamental structural problems with the forces: we cannot achieve our planned buys because costs outpace even the most generous budgets; and our planned buys are not themselves very impressive because it is so expensive anymore to procure hardware. In the best of defense budget times, under the Reagan Administration's FYDP projections, we may not achieve presently planned buys of equipment, which themselves, in the case of Air Force aircraft, have been likened to a small bump compared to what we were once able to buy for the same funds.

I would refer the Committee at this juncture to a second excellent study quite recently made available, this one -- entitled "A^3" for "Affordable Acquisition Approach" -- by a group of retired Air Force generals who analyzed several dozen Air Force acquisition programs form the 1950s to the present. The study's conclusion: if the current Air Force procurement plan is fully funded (at suggested levels) over its entire term, and real (noninflationary) costs rise at the rate they have averaged since 1970, the procurement plan will fall 23% short of goals. I quote: the "Air Force investment program is in trouble. If the Air Force continues /its accepted way of doing business/, it will acquire significantly less equipment than is now planned, /and/ significantly less equipment than could be obtained for the dollars likely to be authorized in the plan years " (emphasis added).

The "A^3" team came to some conclusions, several of which I find utterly persuasive and to which I shall return in a moment. First I would

like to turn to some findings I made last fall when preparing a chapter on DOD for the Heritage Foundation. Concerned with this problem of cost growth and its effects on force structure, I wanted to know more about the character and magnitude of cost growth for individual programs. I found the Selected Acquisition Report (SAR) Cost Summary a great help, and developed the following table showing the cost growth history for most of the SAR programs in production as of June 30, 1982.

(See following page)

BEST COPY AVAILABLE

Program	Base Year	Cost Growth as % of Real Dollar D.E.[1]: Originally Projected Inflation 1	Actual to Date (C.E.[1]): Inflation 2	Program Changes[2] 3	P.C.R.[3] Escalation 4	Total[4] 5	Percent Current Program Completed[5]: Approp'd Spending 6	Quantity Procured 7	Procurement Unit Costs[6] ($ in K, M and B): Future Projected Average 8	Estimate for FY83 9	% Growth Projected (over FY83) 10	Quantity: D.E.[1] 11	C.E.[1] 12
Hellfire	75	45	85	81	136	303	22	3	42K	67K	−37	24,841	35,985
Patriot (FCS)	72	24	76	11	80	167	32	22	90.6M	73.4M	23	240	108
UH-60A	71	19	127	24	147	298	36	40	7.6M	6.1M	25	1,123	1,117
AH-64	72	100	155	31	108	293	24	4	11.8M	20.1M	−41	545	455
FVS	72	53	220	713	1790	2722	20	16	1.86M	1.68M	11	1,205	6,903
M-1 Tank	72	100	187	140	389	716	27	23	2.53M	2.68M	−6	3,325	7,071
Copperhead	75	47	60	5	27	92	34	20	31K	24K	29*	133,058	44,986
DIVAD Gun	78	44	54	5	32	92	19	9	5.7M	7.76M	−27	622	622
MLRS	78	55	90	−2	−3	85	17	36	NA**	6.17M	NA**	183	343
F-14	69	14	43	148	374	565	31	57	69.7M	49.1M	42	469	845
F-18	75	61	192	77	127	395	21	12	25.1M	33.9M	−26	811	1,377
CAPTOR	71	9	53	123	243	418	40	38	370K	319K	16	6,077	4,197
AIM-9M	76	86	108	20	26	154	28	19	76K	86K	−12	4,089	5,327
AIM-7M	78	41	72	16	29	117	26	18	163K	202K	−19	7,349	7,384
Harpoon	70	30	71	70	200	341	46	53	1.17M	1.15M	2	2,922	3,405
Tomahawk	77	34	41	189	322	552	14	5	5.16M	3.62M	43	1,163	4,068
Trident	74	10	58	31	62	152	61	60	1.94B	1.68B	15	10	15
SSN-688	71	12	62	80	232	373	48	70	729M	743M***	−2***	32	56
CG-47	78	56	84	57	65	206	25	29	1.26B	1.05B	20	16	24
FFG-7	73	24	138	111	192	442	63	80	453M	375M	21	50	60
F-15	70	23	84	125	368	577	34	52	38.4M	40M	−4	749	1,415
F-16	75	38	141	268	450	859	24	37	25.3M	18.6M	36	658	1,997
AIM-9M	76	83	88	71	76	235	50	44	68K	60K	13	3,430	7,060
AIM-7M	78	30	4	231	273	507	29	23	145K	160K	−9	3,790	10,635
E-3A	70	24	52	40	100	192	64	79	157M	88.4M	78	42	46
EF-111A	73	53	89	69	98	256	73	78	23M	23M	0	42	42
ALCM	77	34	67	45	60	172	35	28	1.67M	1.47M	14	3,459	4,372
GLCM	77	45	89	85	86	260	24	12	4.99M	4.42M	13	702	565

[1]Development Estimate (DE) as of the Base Year; Current Estimate (CE) as of June 30, 1982.

[2]The real dollar costs of program changes.

[3]Program Change Related (PCR) Escalation denotes the inflation costs of program changes measured at the time any change is implemented.

[4]Totals do not reflect rounding in Columns 2 to 4.

[5]Appropriated Spending and Quantity Procured (of C.E.) as of June 30, 1982.

[6]Derived from SAR program cost and quantity figures (June 30, 1982); includes advanced procurement, development and any other costs peculiar to program.

*Cancelled by Congress in August 1982.

**Impossible to determine future unit costs because system includes both vehicle-launcher (of which 36 percent were procured) and missiles (of which less than 2 percent were procured as of June 30, 1982).

***This single estimate is taken from the SAR of December 31, 1981, as adjusted by the Navy for advanced procurement. The FY83 estimate in the SAR of June 30, 1982, was $866 million, a jump that may be due to funds for the Vertical Launch System.

I will not try to explain the full table. I have found that the table is easily misinterpreted, so I will offer a bar graph to show what the table suggests for the first weapons systems listed, the Hellfire missile. I hope things are a bit clearer after looking at the bar graph.

(See next page)

Basically, DOD estimated in 1975 -- the year DOD decided to enter Hellfire into Full Scale Engineering Development, which is a point after which precious few systems are ever terminated -- that Hellfire would cost a total of $735 million over its full course. This total was to comprise a real dollar cost for the basic program -- an amount I represent on the graph simply as 100, to act as a baseline -- and inflation on the basic program -- an amount that in Hellfire's case was to be 45% of the size of the basic program, and which I therefore represent simply as 45 on the graph.

By 1982, when just 3% of the total buy had been ordered, the DOD estimated the program would cost $2.048 billion, which using the same method as above is represented by the figure 403. Instead of a total of 145, the new estimate put Hellfire at 403.

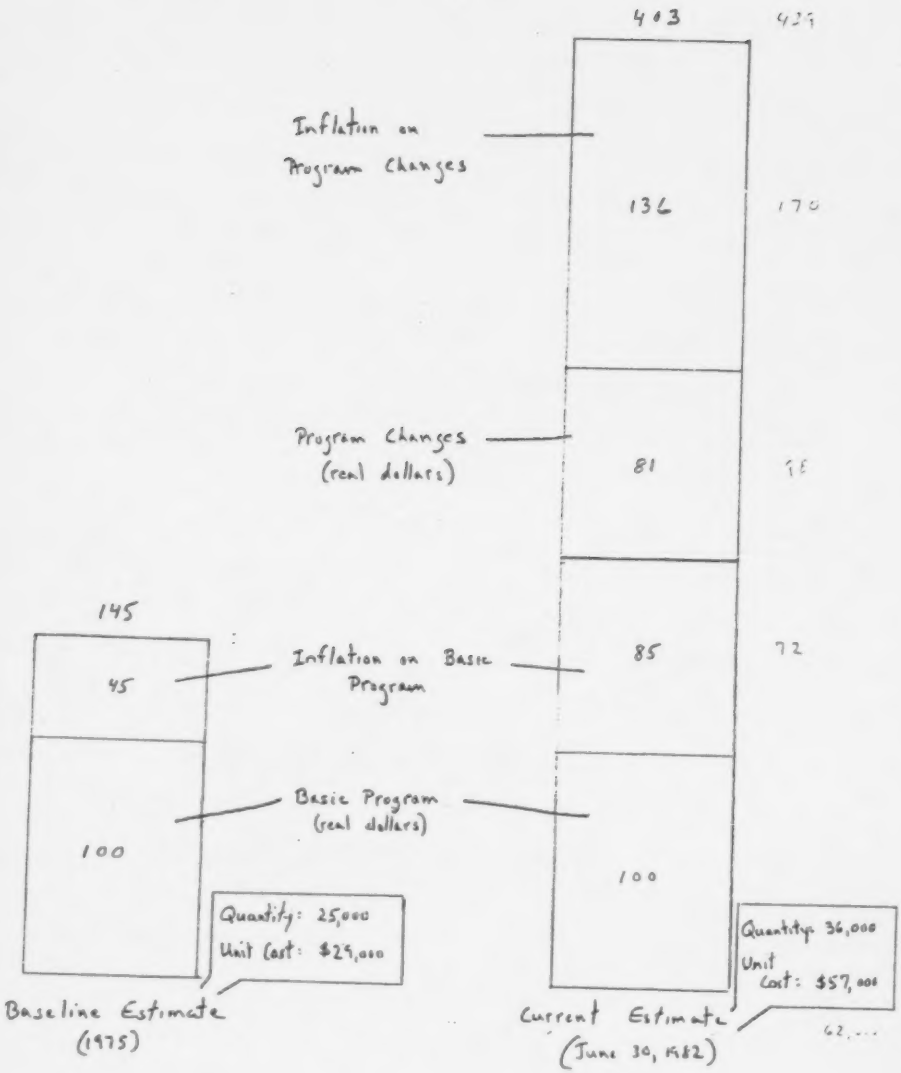
Now it is true that DOD had increased the total buy from 25,000 to 36,000. But even considering that increase, the average cost per missile had increased from the original program estimate of $27,000 to a new total of $57,000.

The program's size had grown in 7 years in the following ways.

HELLFIRE

Program Cost Projections

(in neutral "cost units")



BEST COPY AVAILABLE

The projected inflation on the basic program had increased from 45 points to 85 points. In addition, there had been program changes -- in quantity, engineering, support, schedule, cost estimates, and other -- which DOD estimated would mean another 81 points of real dollar costs. These changes of course carried with them inflation effects, which DOD estimated would add yet another 136 points to the cost. These three new estimates -- for inflation, and for program changes in both their real and inflated dollar aspects -- had to be considered as being added to the same baseline cost of 100, which had not changed.

Obviously, the great bulk of the cost growth was due to the program changes, which represented some 217 points out of the total addition of 258 points of cost (403 minus 145).

The Hellfire program, by June 1982, had increased in quantity by about 50%, but it had increased in cost by nearly 200%. A quick glance down Column 5 of the table itself showed that Hellfire was by no means alone in this kind of cost growth. In fact, it was in better shape than many other SAR programs.

It became clear how it could be that even the substantial budget increases secured by President Reagan could go to buying so little more in the great scheme of things. Nearly all of these programs were growing in cost at a rate that must surely overwhelm any budget level. Without terminations of some of the programs -- it almost does not matter, from this point of view, which ones -- there simply would not be enough room in the overall budget to meet all the plans. As before, plans would have to be reduced, probably by program stretchouts in many programs. If one looks

at the SAR Cost Summary of December 1982, that seems to be exactly what has happened.

I return now to the Air Force's "A^3" report. It states in part: "The principal problem is program instability which in turn is caused by funding instability, requirements instability, and technical problems, and all three are interdependent. Very seldom do you have one without the others. The impact has been less equipment bought than could have been with the same amount of money, and the prospect is that the problem will get worse if we continue to do business as we do now."

The report later states by implication what it means by 'business as usual.' "We are trying to do too much with our current budget and as a result we are not doing many things well. We need to maintain the current plan for stable and efficient programs and stabilize the budget, schedule, and technical baseline of high priority programs. What this means is, limit new starts and cancel inefficient/low utility programs to stabilize what we have in the FY85 POM. The key to the entire process however is to budget to most likely costs. Unless we face reality at the beginning of a program, we will stay in our present mode of responding to the 'squeaky wheel.'"

I hope you will forgive me, Mr. Chairman, this long trek through what may appear to be subjects outside the immediate interests of this Committee. I believe, however, that these are matters of the highest importance to the national defense, and that this Committee can contribute directly to significant improvements with regard to them.

Two areas of improvement suggest themselves: estimating costs at

the outset of programs, and controlling costs and cost growth during programs.

1. Estimating costs.

The principal cause of program cost growth is program change (or instability), specifically, unplanned program changes which DOD typically makes virtually no allowances for in its budgets. (I have been informed that somewhere between 3 and 7 percent of the total budget is usually a "planning wedge" to cover such changes -- but of course wedges of this size are soon dwarfed by the costs of changes.) DOD argues that it cannot estimate the cost of some event that is not even foreseen. It further points out that it is not permitted a substantial 'slush fund' for contingencies. Both points are correct, but there may still be remedies. Part of these remedies fall on the front end of better estimating costs, while the rest lay in the task of significantly controlling program change and therein the insupportable costs.

First, while no precision is possible in predicting what changes will occur in a program, guidelines may be developed from the experience of similar kinds of contemporaneous programs. Recommendation: DOD should be required to inform Congress at the time a program passes DSARC II (again, the decision line for Full Scale Engineering Development) not only what the program's projected cost is barring unforeseen changes, but also what the range of actual and projected total program cost growth has been for programs of similar functional and technical character for the past, say, 10 years. Likewise, DOD should be required to factor these measures of possible program growth into its decision at DSARC II.

Second, Congress can assess the direction and quality of DOD budget

plans only if it knows the background against which DOD presents any particular budget year's request for quantity of equipment at a given cost. The only reliable means to gain this background is to contrast the budget year request with previous years' projections of plans for that year. The FYDP is the best document for this purpose, as it contains quantity/cost projections for both the budget year and the four outyears. The Congress does not receive these data at this time. It should not, of course, receive the FYDP itself, which is classified. But it should expect to see these quantity/cost figures (for the full 5 years) which can be extracted from the FYDP. Congress already receives these data for the shipbuilding plan, and in certain limited cases for other items. Recommendation: DOD should be required to submit its 5-year projections for quantity and cost on all unclassified systems to Congress, and to the Congressional Budget Office and the General Accounting Office for analysis. Past years' 5-year projections (going back to 1962) should also be submitted for study of longterm trends in DOD decisionmaking.

2. Controlling costs and cost growth.

The other side of the cost problem is that despite the fact that costs grow inexorably beyond projections and budgets, costs themselves are in many -- probably most -- cases far higher than is fair. There is enormous inefficiency at our plants when one measures, for example, how much labor is now being put toward producing hardware versus how much labor should be necessary. There are well established industrial engineering and accounting methods to measure how much labor the fabrication, assembly, and testing of hardware should reasonably require. These "standard labor hours" are very often not met by our contractors. The ratio between standard

and actual hours sometimes reaches as high as 1:20, and often falls in the 1:2 or 1:3 range. On top of these costs, there is often unconscionable overhead charged to a program -- costs that are cited as overhead where in fact they are just fat.

These excesses exist in acquisition programs for major end items, subassemblies, and spare parts. I have no way of knowing the overall magnitude of the excess costs, but in speaking to one Pentagon cost analyst of many years experience I was told that the rule of thumb is to look for 30% savings in any program -- which he claims is easy to find -- before you move on to the next one. In any case, I believe it can be said with certainty that billions of dollars are being spent to pay for excessive costs in Pentagon contracts.

The problem is how best to cull out these excesses, so we can put that money to better use improving our forces. Two different approaches exist: the use of auditors, and the forces of the free market. I have no doubt the market is far and away the more effective and reliable tool for controlling costs and cost growth, but both tools must be used.

Recommendation (1): Congress should mandate that GAO establish a major "should cost" team of industrial engineers, accountants, etc., and Congress should urge the Defense Department to establish a similar team at the level of the Office of the Secretary. These auditing functions are already officially the province of the Defense Contract Audit Agency, and there are hundreds of Government auditors assigned to contractor plants throughout the country for just these purposes. As is so often the case, however, there is a need for competition between bureaucracies just to insure that the job gets done. These new teams should have full authority

to check the production efficiency of any DOD acquisition program valued at, say, $100 million or more.

Again, these functions are being performed now and have been for years, but it is always healthy to turn up the heat by invoking competing approaches to old problems. There is certainly enough fat for all the teams to feed on.

The better tool for controlling costs and cost growth is free market competition. If it is used to the full, the need for auditors is minimized. But we are a long way from full use of competition.

The need for competition, and its clear benefits, are no secret. A long and impressive list of studies has established beyond all question how competition between contractors will consistently drive unit costs down by anywhere from 20% to 50% or more. Even the highly touted learning curve, when it is working in practice in the case of a sole source contractor, will be immediately undercut by the savings generated by introducing a single serious competitor for the contract.

Given that competition is so demonstrably effective and universally endorsed, I went to find how we have fared over time in increasing it. I found the official statistics show an almost steadily downward trend in full competition, that is, in formal advertising as a percentage of total DOD acquisition spending. Here are the figures:

FY54	14.2%	FY60	13.8%	FY66	14.2%
FY55	15.0	FY61	11.9	FY67	13.4
FY56	15.1	FY62	12.0	FY68	11.5
FY57	16.3	FY63	12.7	FY69	11.0
FY58	13.9	FY64	14.4		
FY59	13.3	FY65	17.6	FY81	5.8

True competition in DOD contracting, which was never widespread, is declining over time. Yet as early as the McNamara years, DOD officials have claimed that the opposite is true, that there is increasing competition. They have often cited figures of 60% or more. They do so essentially by expanding the definition of competition to include both negotiated procurement and those programs that at some point in their lives have undergone some kind of competition (whether of design or price) even though since that time they have been purely a matter of sole source procurement.

The cost benefit of competition derives from one thing: the natural incentives of the market. Sealed bidding is by far the best guarantor that those forces will be active. What is needed is continuous alternative sources for a product, in full competition with eachother. Anything less opens the way, in varying degrees, to losing those powerful and reliable incentives.

Claims about a program's being "competitive" just because it involved competition at some time in the past should, I firmly believe, be dismissed out of hand. One can conduct the best prototype competition possible -- and benefit greatly thereby in settling on the best available design -- and then lose all benefit in cost control by permitting a sole source the production contract.

Negotiated procurement is more difficult. It may indeed represent legitimate competition, if fairly run, and there are certain circumstances where it may be the desirable form of competition. But it is not full competition, and it necessarily opens the door to innumerable, undesirable pressures and incentives that in the long run will work against the force of the market. In fact, it seems to me that negotiated procurement is

indicated mainly in those instances where the competitive market is weak. As such, its use is a sign of the weakness of the market, not competitive strength. For example, its use is indicated where an item's design is so much in flux that contractors have too little to go on to know how to bid a fair price. This problem is especially present where the design approach is complex and rapidly changing. Of course, it must be recognized that one quite rational incentive of the market is to avoid competition by insuring that a design fits this description. It is precisely these negative incentives of an unhealthy market that we must do everything to combat and overcome.

For the time being we are stuck with an unhealthy market, no doubt much of our making over the years. The question is how to begin to correct the situation. The first concern must be where it is we wish to end up. I would offer the following description of a healthy process for DOD hardware development and acquisition.

A small team of professionals with both field and technical experience sets forth a brief description (perhaps no more than 25 pages) of the operational (not technical) requirements which in effect would constitute the tasks of the field test by which the system would eventually be judged. These functional requirements are given out to contractors with the order that they produce one or more prototypes of system to accomplish the goals, the designs and approaches being left entirely to them. At a specified time (a short time, by the way, after the requirements packet is released -- certainly less than two years), a competitive "fly-off" or "shoot-off" (using field forces, and in field conditions) will be held between the alternative designs, measuring their performance against the standards set forth in the requirements packet. One design is chosen. That

design is temporarily frozen and a data package drawn up which will then be used as the basis for sealed bid competition among the original entrants (or any others) to gain a contract for low-rate production. A full scale rigorous field competition (again, using field forces personnel) of a unit's worth of the newly produced design is then run against the item of equipment currently fielded with the forces; the test would require that the new design be accompanied by its full complement of support equipment (including test sets, software, etc.). The winner is put up for sealed bid competition for series production. Proposed improvements are held off until some point well into production, at which time the improved version is again tested side-by-side with the standard model. The winner is again put up for the same kind of annual sealed bid for production, with the major award going to the most promising bid. It is important to note that the chosen design would not be held to the technical requirements of the original data package, and competing firms would be encouraged to improve on the design so long as their improvements met the original operational requirements at the same or lower cost.

I want to emphasize that the benefits of competition extend far beyond cost control. Properly run, a competitive program would lead to the best available designs -- incorporating advances in techniques or materials in a disciplined manner structured so as not to overwhelm the system with endless, ultimately debilitating changes -- at substantially lower costs than we are now accustomed to bearing, and in far shorter times between original requirements decisions and the fielding of significant numbers of the chosen design.

But perhaps the greatest benefit of such an approach to full competition as I have tried to describe would be reduce our present inability to manage our defense contracts and programs effectively in a larger sense. We are almost incapable today of terminating a major acquisition program -- the dislocations it would cause in large firms and in communities are nearly too much to bear. Again, I would remark that this severely constrained situation indicates the unhealth of our "competitive" system: we have far too few firms with stakes on individual contracts far higher than is consistent with the ability of the overall defense establishment to start up or terminate programs according to either budget or operational needs, rather than according to the immediate and disproportionate claims of the few.

We must achieve a situation where we can decide up or down on various systems on the basis of defense needs, without causing irremediable damage to a narrow sector of our political or economic fabric. We are far removed from such a situation today. We are the weaker for being so far removed. It seems to me that only thoroughgoing competition will correct our frailties.

Recommendation (2): Congress should mandate steadily increasing use of sealed bid procurement competition; it should label as "sole source" any procurement not continuously competitive; and it should take immediate steps to begin fostering the kind of fully competitive atmosphere described above which would permit the greater use of sealed bid and other market tools for the overall DOD acquisition effort.

Chairman ROTH. The committee is in recess until the call of the chairman.

[Whereupon, at 1 p.m., the committee recessed, to reconvene at the call of the Chair.]

ADDITIONAL MATERIAL SUBMITTED FOR THE RECORD

U.S. DEFENSE PLANNING

A Critique

Introductory Statement
For Hearings on Defense Management
by the Senate Governmental Affairs Committee

by

John M. Collins

Elizabeth Ann Severns
and
Thomas P. Glakas

Research Assistants

March 1983

(157)

21-162 O--83---11

U.S. DEFENSE PLANNING

A Critique 1/

BACKGROUND, PURPOSE, AND SCOPE

Sound planning must underpin programs designed to defend the United States from all foes, both foreign and domestic. The President, National Security Council (NSC), State Department, Pentagon, Congress, and senior military commanders in the field all are important participants. So are intelligence, academic, and research communities, which provide support.

This critique first establishes standards, then proceeds to appraise top planners, staffs, apparatus, procedures, and output since World War II, with particular attention to chronic or recurring problems that adversely affect U S. national defense efforts. Essential improvements at acceptable costs will be difficult (perhaps impossible) until identified defects are reduced substantially.

The ultimate aim of the study is to stimulate debates that could help decisionmakers appraise competing courses of corrective action and pick the most appropriate options at an expeditious pace.

PROFESSIONAL CREDENTIALS OF PRESIDENTS

No defense planning system can be any better than the people who shape and operate it.

Presidents are the pivot. They either make the most important planning decisions or retain responsibility when they delegate that authority to subordinates. Eisenhower, however, is the only defense specialist to occupy

---

1/ Summarizes Collins, John M., U.S. Defense Planning: A Critique, Boulder, Colorado, Westview Press, 1982, 337p.

the White House in this century. Strategic expertise will continue to be the exception, rather than the rule at that level, because U.S. Presidents come from all walks of life and, once installed, have little time to learn. They must therefore depend extensively on advice from civilian officials who specialize in foreign/defense policy and on military professionals.

PROFESSIONAL CREDENTIALS OF PRESIDENTIAL COUNSELORS

Presidential counselors should possess impeccable credentials, but education and experience prepared few of them to participate effectively in the defense strategy formulation process over the last 37 years. Assistants to the President in the NSC and Secretaries of State, by and large, were better equipped in that regard than Secretaries of Defense (SECDEFs), most of whom were technocrats, resource allocators, efficiency experts, or management specialists before being appointed. Twelve out of 15 SECDEFs found on-the-job training imperative. The press of daily duties made that a slow process. Approximately one-third of the Joint Chiefs (15 out of 48) lacked any joint assignment in their entire careers. Only 11 (less than one-fourth) had previous joint service in the Pentagon.

Fast turnovers allowed little time for the brainiest incumbents to become proficient. Average tenures were so short (2.4 years for SECDEFs) that even fully qualified players found it almost impossible to promulgate cohesive policies and programs, much less pursue them to successful conclusions. Those who fathered failures rarely remained in place long enough to take responsibility.

PROFESSIONAL CREDENTIALS OF STAFFS

Capable staff support is another prerequisite for superior planning. Untutored principals are especially dependent.

Unfortunately, neither the National Security Council nor State Department features a career staff that ensures continuity. The former employs foreign policy and defense professionals, who depart when party affiliations of Presidents change. Political appointees people many important positions at the State Department, where key personnel bob in the front door and out the back at high speed. State's bureaucratic backup comes from the Foreign Service, whose members often move rapidly from one staff position to another in Foggy Bottom. There are reasons for these personnel policies, but such instability is not conducive to sound planning.

Political appointees serving the Secretary of Defense suffer from turbulence similar to that described for top staffers in the State Department, but military officers on loan furnish considerable leavening and remain a little longer. Corporate memory comes from career civilian executives, many of whom occupy the same or similar slots a decade or more. Responsibility, in short, is inversely proportional to retainability. Planners with the greatest opportunity to influence defense decisions stay the shortest time.

Officers posted to the Joint Staff rarely appreciate the interlocking nature of land, sea, and aerospace warfare when they report for duty. Perhaps two percent of those assigned in 1982 had any previous joint staff experience. Two-thirds had never served on <u>any</u> high level staff. Legal limits on tenure prevent a professional core from developing. There is no time to form closely integrated teams.

COOPERATIVE EFFORTS

Defense planning components must interlock horizontally as well as vertically, like squares in a crossword puzzle. Open lines of communication are especially important when coequal principals have drastically different

views. "Closed loops," however, are seldom seen in the U.S. system.

The President, at the peak of our planning apparatus, is well advised to keep congressional leaders and foreign chiefs of state informed about sensitive U.S. policy decisions before, not after, plans are implemented. No official record reports whether successes outweigh failures in this consultation process, but frequent discord has been evident during recent decades. Poor coordination sometimes caused problems. Prior consultation apparently took place in many instances, but the President refused to accept adverse advice. Results indicate room for reducing future friction, whatever the case.

The NSC staff has tended to shape, rather than coordinate, national security policy most of the 21 years since Eisenhower left office. Competition with the Cabinet, uncontrolled or even encouraged by some Presidents, has prevented cooperation, compromise, and top-level coordination for protracted periods.

Critical connections also come together at State and Defense, but collaboration frequently breaks down before it really gets started. Respective Secretaries have been closely knit planning partners only about one-third of the time since Truman's first term. Beyond those periods of cooperation, "peaceful coexistence" has been the best we could obtain from principals who went their own ways for most planning purposes. Competition for power has erupted into open warfare on three occasions.

Every major study of and debate about the Joint Chiefs since 1947 has dealt with "dual hat" dilemmas that divide their attention between JCS and Service responsibilities. Severe conflicts of interest cause cooperative efforts to evaporate under pressure and limit strategic options before they

can begin to shape plans. Progress is slow. Many products are spongy. The Joint Chiefs have no programming/budgeting shop whose express purpose is to link plans with resources realistically.

Civilian analysts working for the Secretary of Defense fill the resultant vacuum. They develop alternatives, provide convincing rationale, and often become ultimate arbiters when the Secretary decides what strategy and associated force posture he should recommend the President approve and Congress support.

Commanders-in-chief (CINCs) of unified and specified commands are poorly integrated into the planning process. The Joint Chiefs therefore shoulder part of their burden, overloading the Joint Staff; the CINCs prepare respective plans in relative isolation; and no one effectively ties the eight interdependent CINCs together.

JCS prestige as strategic planners consequently has been low for the last 22 years. The Chairman and individual members sometimes enjoy strong personal influence with the President and Secretary of Defense, but corporate JCS planning went into eclipse after the Bay of Pigs and has remained so ever since.

CONGRESSIONAL CONNECTIONS

Congress, cast in the role of resource allocator and concept critic, does not participate directly in the defense planning process. Its authorizations, appropriations, and oversight authorities, however, frequently shape strategy in a decisive sense.

Many problems mirror those just described for the Executive Branch.

The House and Senate contain few freshman who possess impressive defense credentials the day they are assigned to Armed Services or

Appropriations Committees. Most are lawyers, businessmen, bankers, and lifelong public servants. A minute fraction of those who once wore military uniforms ever profited from duties that dealt with national defense planning.

Congressional workloads and focus on force requirements and funds inhibits the learning process, despite continuity that often is measured in decades. Some absorb strategic skills by osmosis over the years, but not many ever become serious students of strategy. Neither do staff assistants who, in the main, are professional program analysts and budget specialists.

Divided responsibilities distract 100 Senators, each of whom struggles to stay in step with three different drums labelled "federal," "state," and "political party." Most of the 435 Congressmen are beckoned by a fourth, inscribed "district." JCS "dual hat" problems pale by comparison.

Defense plans and programs forwarded to Capitol Hill for approval face fearsome problems, partly because the 535 Members of Congress currently populate approximately 300 committees and subcommittees. Defense planners often fumble, trying to plug into that apparatus at the most appropriate spot, because Congress has no hierarchy even remotely comparable to that in the Executive Branch. House Speakers and Senate Majority Leaders, once so strong, no longer possess assured implementing powers. Neither do committee chairmen.

Parliamentary surprises are commonplace. Decisionmaking is a ponderous process that depends on compromise among many participants, who must develop coalitions that contain working majorities, while beset by lobbyists and internal special interest groups that further fragment Congress. Some within Congress question whether the current composite structure is well suited

to program, budget, or participate effectively in the U.S. defense planning process.

SUPPORT ESTABLISHMENT

Strategic intelligence furnishes defense planners essential facts and other information concerning opponents, partners, and nonpartisan players on the international chessboard, singly and in assorted combinations. Strategic education helps provide defense planners a headstart toward professional competence. Strategic research develops conceptual implements.

As it stands, however, the U.S. intelligence community suffers from people problems at least as debilitating as those that plague planners in the State Department and Pentagon. Important collection capabilities, which lapsed in the early 1970s, still leave substantial gaps in the data base. Procedural peculiarities that often preclude proper analysis include compartmentalization, concentration on short-term problems, and built-in biases. Those shortfalls in combination leave defense planners less well informed than they should be.

Many U.S. graduates, who majored in economics and business administration, are well grounded in the fundamentals of management. It is difficult to find any who acquired a firm foundation for defense strategy formulation from any kind of academic institution. Some colleges sandwich summary courses into curriculums, but almost all are shallow. No school of strategy in the United States prepares senior military officers and their civilian superiors or peers to perform professionally in that field. Trends toward improvement are in motion, but progress is slow.

No strategic research center considers creative theories and concepts its main responsibility. None of them consciously attempts to start a chain

reaction of innovative thought that could lead to increased planning competence. U.S. defense planners consequently struggle to solve present problems with ideas that often were produced in decades past, when the context was quite different.

PLANNING OUTPUT APPRAISED

Output is the ultimate test of defense planning. Some spectacular successes matched superb systems with strategic and tactical needs, but the focus here is on improvement. The U.S. system chronically suffers from six types of problems, which are listed below with two illustrations each:

1. Questionable Savings
   a. Heavy reliance on unready reserve components to reinforce understrength regular forces.
   b. Heavy reliance on nuclear weapons to reduce conventional force requirements.
2. Extreme Policies
   a. Exclusive reliance on antiarmor missiles, although guns are more useful in many circumstances.
   b. Heavy reliance on shipboard missiles, although guns are more useful for shore bombardment and could help strengthen air defense.
3. Dated Policies
   a. Drastically reduce U.S. forces after every war, although commitments no longer decline commensurately.
   b. Rely on quality to offset the Soviet quantitative lead in land forces, although we have lost much of our former edge.
4. Incompatible Policies
   a. Stress airlift for rapid deployment of U.S. armed forces, but slight sealift needed to sustain them.
   b. Maintain Marines with a primary mission of amphibious assault, but furnish insufficient amphibious ships.

5. Extreme Complexities

   a. Pursue complicated ICBM basing modes that create extravagant costs in return for questionable capabilities.

   b. Pursue technological innovations that users operate and maintain with difficulty.

6. Budgetary Imbalances

   a. Provide defense resources that rarely are well matched with U.S. commitments and postulated threats.

   b. Divide the defense budget in ways that inhibit force modernization, readiness, or both, requiring costly "catch-up" efforts to reduce resultant risks.

Many U.S. plans consequently are unsuitable, infeasible, unacceptable, and/or inflexible in various combinations. Acceptability in terms of cost has been most common, indicating that U.S. resource allocators, rather than strategic planners, frequently have the final say.

COMPOSITE IMPLICATIONS

Defense planning standards outlined below afford a useful yardstick for measuring U.S. performance over a period now approaching four decades (1946-1983).

— Competent Planners. Neither selection nor retention policies consistently people the system with top officials or staff assistants who are prepared by education and experience to perform effectively.

-- Team Play. Divided loyalties and jurisdictional disputes pull the system apart at every level, often causing cross-purpose planners to put a greater premium on intra-system competition than partnerships.

-- Goal-Oriented Guidance. Disagreement on fundamental goals, which often are poorly identified (even undefined), makes it difficult or impossible for U.S. defense decisionmakers to advise the President adequately or give subordinate planners proper guidance.

— Spectrum of Plans. The absence of basic research, ponderous procedures, and prejudiced opinions, reduce opportunities for (sometimes prevent) alternative plans that attack problems from several perspectives, using assorted assumptions and scenarios.

-- Realistic Resource Allocation. U.S. resource allocators in peacetime often do not match money, manpower, or materiel with important deterrent/defense plans.

-- Timely Output. Major U.S. defense plans commonly take two or more years to reach completion and approval, while participants with vested interests and de facto veto powers pull in opposite directions.

-- Impartial Inspection By Professionals. Competent outsiders expressly picked to probe for weak spots rarely review U.S. defense plans before they reach the President or his proxies, who must accept or reject.

REMEDIAL MEASURES

The U.S. defense planning system functions with passable competence, according to supporters who properly point out that no other nation even closely approaches perfection in that difficult field. Many American aims and missions have been, and continue to be, accomplished effectively, if not efficiently. Nuclear deterrence still prevails. Our alliance system still serves useful purposes. Calculated risks over a period of years have proved acceptable. No calamities have occurred, with the arguable exception of Vietnam. Costs could have been greater and we have avoided the problems of a command economy.

Those who believe that the U.S. defense planning apparatus, despite imperfections, works well enough to leave alone should resist attempts to tamper. Those who believe that deficiencies of the system are more obvious than its merits might wish to explore remedial measures.

The following exposition of problems and options makes no attempt to review the full spectrum, with pros and cons for each case. That would require a series of separate studies. It simply presents five samples, outlining a few approaches for each to illustrate the opinion spread.

Problem 1: Competence of Principals

The U.S. defense planning system installs few leaders who possess first-class credentials before they take top defense planning posts. A distinct minority during the last 37 years could be considered professionally qualified to supervise the process and select politico-military alternatives until they had been in office for lengthy periods.

Options for Improvement:

-- Lift legal limitations that reduce the pool of candidates for Secretary of Defense, Deputy SECDEF, Under Secretaries of Defense, and the Joint Chiefs of Staff.

-- Nominate and confirm no senior officials who lack previous experience applicable to functions they are to fulfill.

-- Lift legal limitations on tenure for top positions in OSD and the Joint Chiefs.

-- Leave occupants in place at least one four-year term or longer.

Problem 2: Competence of Staffs

Personnel recruiting and retention policies prevent the development of professional planning staffs to support the National Security Council, the Secretaries of State and Defense, the Joint Chiefs, and the CINCs.

Options for Improvement:

-- Increase incentives to seek staff assignments (prestige, promotion prospects, and so on).

-- Establish a professional core for the NSC staff.

-- Reduce the number of political appointees in the Departments of State and Defense.

-- Pick staff members by competitive examination and (for top spaces) personal interview.

-- Permit CJCS and his Staff Director to draw officers from the four Military Services for permanent control by a professional Joint Staff.

-- Stabilize tours at 3 to 4 years, with no legal restrictions on extension.

-- Insist on recurring staff assignments for civilians as well as military officers, after periodic reacquaintance with the "real world" at lower levels.

-- Rotate those assignments to create some generalists with cross-experience in different regions (Europe, Asia, Middle East) and disciplines (command, plans, operations, intelligence, logistics).

Problem 3: Familial Conflict

Internecine conflict in the U.S. defense community often makes branches, departments, and their components on both banks of the Potomac seem like enemies, rather than teammates with immensely important mutual interests.

Options for Improvement:

-- Place a high priority on personal and professional compatibility when picking top officials.

-- Insist on staffers who understand the parts other components play, their methods of operation, problems, and interrelationships.

-- Promote that characteristic through cross-training and assignments.

-- Relieve recalcitrants who cannot or will not put team play before their own or institutional interests.

-- Reorganize OSD to reduce friction with the JCS and Military Services.

-- Reorganize the JCS to reduce interservice rivalries.

-- Amend the National Security Act of 1947 to specify that (a) JCS advice include optional solutions to every problem, with input from Military Services and the CINCs every step of the way, and (b) each member of the JCS and each CINC indicate which option he prefers in each case, providing full rationale.

Problem 4: Educational Support

U.S. civilian colleges and universities support foreign policy and resource management much better than conceptual defense planning. No military college in the United States specializes in defense strategy.

Options for Improvement:

-- Encourage selected civilian colleges to offer degrees in national security studies.

-- Handpick commandants and faculties for all service colleges, stressing professional competence plus academic expertise.

-- Leave them in place long enough to implement programs prepared in response to specific JCS guidance concerning curricula.

-- Admit students to the Armed Forces Staff College (AFSC), National War College (NWC), and Industrial College of the Armed Forces (ICAF) only after competitive examination.

— Make graduation from AFSC a prerequisite for admittance to NWC or ICAF.

— Stress conceptual strategy at all senior service colleges and the Foreign Service Executive Seminar.

-- Feed graduates into the U.S. defense planning system at all levels.

-- Provide "post-graduate" courses on strategy for flag officers and senior civilians, with emphasis on options.

Problem 5: Strategic Research

No strategic research center in the United States currently considers its foremost responsibility to be the testing of current concepts and the development of creative theories in the field of defense strategy. Planners consequently struggle to solve strategic problems with unsharpened tools.

Options for Improvement:

-- Provide incentives (including contracts) for civilian research centers to concentrate on conceptual strategy.

-- Amend mission statements at all military research centers to include theoretical and conceptual strategy as an essential function.

-- Handpick members with proven potential expertise.

-- Mix intellectual mavericks with conventional minds to provide a practical balance between basic and applied research.

-- Establish strategic concept "clearing houses" that can tap talent across the country and around the world (one belonging to each Military Service could feed findings to a center with the JCS).

-- Provide output to the U.S. defense planning community.

Some corrective actions could be accomplished in simple fashion, almost immediately, and with little fanfare. Other refurbishment would take more time, require statutory alteration, or both. Some remedies might create problems more pernicious than those they cure. Decisions to adjust in any direction thus should include identification of:

-- Possible unintended consequences

-- Probability that those consequences will occur

-- Expected impairment from occurring consequences

RECENT INITIATIVES

of the

JOINT CHIEFS OF STAFF

and

NATIONAL DEFENSE UNIVERSITY

Deficiencies endemic to the U.S. defense planning system, identified in my introductory statement, are deep-seated and of long duration. Corrective actions likely will be evolutionary, rather than revolutionary, over extensive time.

Senator William V. Roth, Jr., Chairman of the Senate Committee on Governmental Affairs, asked for answers to four questions concerning current status:

-- What are the Joint Chiefs of Staff doing to improve the planning process within that organization?

-- Can the Joint Chiefs of Staff do more to limit interservice squabbling and ensure that the services cooperate effectively?

-- Is there too much duplication between the work of many of the agencies in the Office of the Secretary of Defense and the Joint Chiefs of Staff?

-- What is the National Defense University doing to improve joint education and research?

This exposition, with oral permission from Senator Roth's office, consolidates questions 1, 2, and 3 to avoid redundant answers, since they are inseparable parts of a single package.

All initiatives noted are tentative steps to implement improvements. It is too early to tell whether results will equal expectations.

JOINT CHIEFS OF STAFF

The Joint Chiefs of Staff (JCS) began a basic review of their apparatus and procedures about mid-1982. I understand that they personally conducted all deliberations, because they believe that effective reform is a matter of immense importance and high priority. Army, Navy, Air Force, and Marine Corps "theologians," who might complicate issues instead of clarifying them, were deliberately bypassed. Not even Vice Chiefs of the four U.S. Military Services received invitations to assist investigations.

Primary emphasis was on self-help, but the intent also was to recommend solutions for consideration by the President, Secretary of Defense (SECDEF), and/or Congress concerning problems beyond JCS control.

General John W. Vessey, Jr., present JCS Chairman, explained the process and its consequences in detail during a lengthy session with me on March 10, 1983. Subsections which follow summarize his salient points.

Phase I: Reconfirm JCS Functions

The Joint Chiefs returned to "Square One," so they could assess JCS statutory duties delineated in Section 141, title 10, United States Code. They found that those functions are sound. Faults, in their opinion, lie mainly with performance.

Phase II: Focus on Demands

Two fundamental demands then came into focus:

-- The need for better advice on strategic plans, provided to the President, National Security Council (NSC), and SECDEF in more timely fashion (which means before they ask for it, as defined by General Vessey).

-- The need for better planning guidance to, and planning support for, commanders-in-chief of unified/specified commands (CINCs) and the several Military Services.

Phase III: Reassess Responsibilities

Having determined their most important demands, the Joint Chiefs reviewed prevailing divisions of responsibility between themselves, the Secretary of Defense, the CINCs, and the Military Services. They recommend two elemental changes for consideration by the SECDEF:

-- The JCS, rather than the SECDEF's predominantly civilian staff, should resume its former de facto role (always de jure) as principal advisers on military strategy and associated policy guidance.

-- The JCS, with input from the CINCs and Military Services, should be responsible for overall force planning, especially present/projected requirements and capabilities in relation to perceived threats.

Those amendments, if adopted, could reduce present duplication of effort between the Joint Chiefs of Staff and the Office of the Secretary of Defense (OSD). The latter, for example, might release most of its military officers. They now number close to 440, including almost 20 of flag rank. The Director of Program Analysis and Evaluation (PA&E) would lose a lot of clout. CINC participation in the planning process would expand both in breadth and depth. The JCS Studies Analysis and Gaming Agency (SAGA), presently in eclipse, would have to be revitalized.

Phase IV: Improve Joint Staff Personnel

Each Joint Chief, speaking as a Service Chief, already has promised to provide officers with joint education and/or experience for service on the

Joint Staff. Army Lieutenant General Jack N. Merritt, recently nominated as Joint Staff Director, has a desirable background for strategic and force planning. He graduated from the Air (not Army) Command and Staff College and the Industrial College of the Armed Forces; has served as a systems analyst in OSD; as Deputy Director of Program Analysis for the NSC; was Commandant of the Army War College; and has a "purple suit" reputation (a slang term used to identify U.S. military officers who believe in interservice team play).

The Joint Chiefs are establishing a system to identify officers formerly assigned to the Joint Staff, and will request repetitive tours for those best qualified. They also are constructing a training program to prepare newcomers.

Statutory limitations on tenure with the Joint Staff are presently seen as severe. Peacetime tours may not exceed three years (curtailments and early retirements reduce the average to less than 30 months for "action officers"; generals and admirals average 24). The Director may not return thereafter in any capacity. Others must remain away at least three years, with 30 exceptions approved by the SECDEF. Law also limits the Joint Staff to 400 commissioned members. An additional 280 assigned to the Organization of the Joint Chiefs of Staff (OJCS) do not count against that statutory total, but additional slots would be required if the JCS assumed force planning responsibilities outlined in Phase III.

The Joint Chiefs therefore seriously consider recommending that the SECDEF ask Congress to lift legal ceilings on Joint Staff size and length of tenure, to afford flexibility always allowed the staffs of each U.S. Military Service.

Phase V: Improve Joint Staff Procedures

Two improvements to JCS planning procedures, now in infancy, are particularly important.

First, the Joint Chiefs seek to strengthen ties with the CINCs, and are increasing CINC input to the planning process. Each CINC recently was required to brief the Joint Chiefs personally (no proxies permitted) on his most important plan. The Chiefs, in turn, intend to use resultant information when they help the SECDEF develop defense guidance and directives for each unified and specified command. Such collaboration could close a loop often left open in the past, if it proves to be part of a permanent new relationship.

Present members of the JCS recognize that interservice rivalries have caused their predecessors to sidestep critical issues consistently. Pressures to appear harmonious produced lowest common denominator plans at a very slow pace. Advice to the President, NSC, and SECDEF was often described as "spongy." The incumbent group proposes to present its opinions as options instead of "answers." That policy, if it pans out, would eliminate any need for concurrence by Military Services. No Service would retain de facto veto powers. Preparation time could be compressed. Recipients of JCS advice could see which solutions have a consensus, where opinions split, and why, before they make decisions. One such divergence occurred in December 1982, when JCS members disagreed on the desirability of Dense Pack basing for MX missiles. Most news media reported that as a weakness. General Vessey presents the same incident as evidence of new strength.

Phase VI: Improve Operational Procedures

The Joint Chiefs have addressed two operational issues, which influence how well they are situated to assist in the implementation of strategic plans,

as stipulated in Section 141(d)(1), title 10, United States Code.

All agreed with General David C. Jones, who was Vessey's immediate predecessor, that a four-star Deputy JCS Chairman could perform many useful functions. They decided, however, after extensive deliberations, not to make that recommendation, primarily because they could not define his duties effectively or his place in the "pecking order." That determination almost certainly will cause continuing controversy.

Clear command responsibilities are particularly important in wartime. The chain currently runs from the President and Secretary of Defense through the Joint Chiefs of Staff to unified and specified commands. Whether the Joint Chiefs should recommend statutory changes which would include the JCS Chairman as an integral link in that chain is still under debate.

Institutional Interrogatives

All but one of the current Joint Chiefs (Admiral Watkins) had joint education and/or experience before receiving present appointments. All had close previous relationships and work well together. General Meyer, the Army Chief of Staff, once served under General Vessey; Vessey later served under him. General Gabriel, the Air Force Chief of Staff, was Vessey's subordinate in Korea. Vessey and Admiral Watkins, The Chief of Naval Operations, were Vice Chiefs of their respective Services at the same time and established rapport. General Barrow, the Commandant of the Marine Corps, backed General Vessey to become JCS Chairman. General P.X. Kelley, nominated as the new Marine Commandant, not only has more joint experience than any predecessor but has dealt extensively with the Joint Chiefs, first as Commander, Rapid Deployment Joint Task Force and more recently as a substitute Chief in Barrow's absence. Kelley and General Wickham, nominated as Army Chief of Staff, were colonels together on the Joint Staff in 1971, and have been close ever since.

Other interconnections are extensive.

Current Joint Chiefs and prospective replacements all profess open minds concerning JCS reform. Admiral Watkins does not share the sentiments of his predecessors, who opposed many proposed amendments at hearings conducted in May 1982 by the House Armed Services Committee. 1/

The Joint Chiefs as a corporate body presently have better relationships with the President than they have since the Bay of Pigs operation 22 years ago. This group already has met with him more times than the last three sets combined, according to General Vessey. They are compatible with the current SECDEF, who seeks their counsel and is sympathetic to reform efforts.

The U.S. defense planning system, however, cannot count on such happy happenstances as a matter of course. Congress at some later date therefore might want to consider optional means of institutionalizing professional excellence of, and close relationships among, the five Joint Chiefs of Staff.

NATIONAL DEFENSE UNIVERSITY

The National Defense University (NDU), established on January 16, 1976, is subsidiary to, and provides direct academic/research support for, the Joint Chiefs of Staff. Lieutenant General John S. Pustay, who is NDU President, explained his many initiatives to me in correspondence dated January 31, 1983 and in a colloquy on March 11, 1983. The Joint Chiefs are personally supervising proposals and progress.

1/ U.S. Congress. House. Reorganization Proposals for The Joint Chiefs of Staff. Hearings Before the Investigations Subcommittee of the Committee on Armed Services, 97th Congress, 2d Session. Washington, U.S. Govt. Print. Off., 1982, p. 97-105, 244-256 (Admiral Hayward); 155-175 (Admiral Moorer); 211-217 (Admiral Holloway).

Educational Initiatives

NDU components include the National War College (NWC), Industrial ollege of the Armed Forces (ICAF), and Armed Forces Staff College (AFSC). inkage until recently was very loose.

Steps now in progress are intended to forge a "real university" that ntegrates activities of all three colleges in more meaningful ways. A few f them are particularly pertinent to joint strategic planning:

-- New construction, if approved and when completed, would permit NDU to consolidate physically separate components. The first "capstone" course for flag officers, for example, occupied impromptu facilities in Leesburg, Virginia this year.

— NWC and ICAF curricula are being intertwined as never before. Graduates of each institution will better appreciate problems the other explores.

— NWC curruculum is starting to stress joint military matters more than international relations, which were paramount in the past.

-- NWC now has "the strongest faculty assembled since the era of Bernard Brodie and George Kennan" (1946-47), in General Pustay's opinion. He sees some "rising stars" in the field of defense strategy.

-- Pustay has asked permission to include allies in student bodies. That would provide better perspectives concerning collective security and coalition warfare.

-- The new Institute of Higher Defense Studies ("capstone") offers an 11-week "course for officer selectees or recent promotees to the rank of general or [admiral].... Objectives of the course are to develop in students the ability to:

. improve the quality of military advice;

. understand the national security environment;

. conceptualize grand strategy;

. understand joint strategy;

. operate jointly at theater level and to be effective and efficient leaders and managers in a joint environment;

. understand mobilization requirements;

. appreciate service and allied force capabilities; and

. evaluate force projection issues."

Research Initiatives

NDU seeks more "relevant" research among its students, members of new research centers, and in its research directorate. The intent is to create a "fountainhead" for military strategists, mobilization/industrial planners, and defense managers.

Some sample projects, recently completed or in progress, include:

-- Maneuver vs. Attrition

-- Escalation Management

-- Non-nuclear Strategic Counterforce

-- Critical Materials Dependency in the Pacific Basin

-- Free World Stockpile Study

-- Naval Reserve Force Ship Manning

-- Scenario for Proud Prophet 83 [An Exercise]

-- Unconventional Warfare Module [A War Game]

Commentary

NDU initiatives tend in the right direction, but comprise initial steps rather than final solutions to long-standing educational and research problems.

Time remains a tremendous constraint in all three colleges, which can do little more than "raise levels of consciousness," as General Pustay put it. Those levels are low to start with in many instances. That is especially true when it comes to national military strategy. Output might improve remarkably if the system provided better qualified students, perhaps by competitive examination, and concentrated on fewer topics of special importance, such as strategic options across the spectrum. The "capstone" course is a good bit better than nothing, but cannot do more than introduce participants to complex subjects in 11 weeks. It currently parrots the "party line."

A good deal of NDU's research responds to occupants of the Pentagon, who know what they want, which is not necessarily what they need most. That practice affects the definition of "relevant" research, which seems somewhat rigid. The balance between applied and basic topics consequently tends to slight the latter, because they are not perceived as practical in the Pentagon.

QUICK ANSWERS TO FOUR QUESTIONS

Discussion on preceding pages permits quick answers to the four prompting questions.

Q-1: What are the Joint Chiefs doing to improve the JCS planning process?

A-1: They are conducting the first comprehensive review of their own system ever undertaken by incumbent Joint Chiefs as a group, are instituting significant reforms on their own initiative, and are recommending other improvements on matters beyond their control.

Q-2: Can the Joint Chiefs do more to reduce interservice rivalry?

A-2: The Joint Chiefs are making a concerted effort to control interservice rivalry, through personal cooperation and changes in JCS planning procedures, but success is not permanently assured and institutional amendments may prove necessary.

Q-3: Is there too much duplication of effort between OSD and the JCS?

A-3: The Joint Chiefs believe there is, and are recommending redivision of responsibilities that, if approved, would reduce duplication.

Q-4: What is NDU doing to improve joint education and research?

A-4: Many NDU initiatives are sharpening the focus in both fields, but in-depth studies of military strategy and basic strategic research both require more stress.

Progress probably will be slow. The Joint Chiefs cannot cope with all problems in isolation. They need help from the President, SECDEF, CINCs, military Services and, perhaps, from Congress. The trend at this stage, however, is encouraging.

○